HQMC
20 Aug 04

E R R A T U M

to MCO P3500.66

AVIATION TRAINING AND READINESS (T&R) MANUAL,
METEROLOGY AND OCEANOGRAPHY SERVICES
(SHORT TITLE: T&R MANUAL,
METOC)

1. For administrative purposes, the Publications Control Number (PCN) has been reidentified. Change the PCN "10203357400" to read: "10203358600".

DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
2 NAVY ANNEX
WASHINGTON, DC 20380-1775

MCO P3500.66
C 4610
11 JUN 04

MARINE CORPS ORDER P3500.66

From: Commandant of the Marine Corps
To: Distribution List

Subj: AVIATION TRAINING AND READINESS (T&R) MANUAL, METEOROLOGY AND OCEANOGRAPHY SERVICES (SHORT TITLE: T&R MANUAL, METOC)

Ref: (a) MCO P3500.14H
(b) MCO 5215.1H

Encl: (1) LOCATOR SHEET

1. Purpose. To publish policies, procedures and standards regarding the training of METOC personnel per reference (a).

2. Cancellation. MCO 1510.105, Individual Training Standards (ITS) System for OCCFLD 68, Weather Service.

3. Background. Reference (a) restructures the T&R manual organization from nine volumes to 25 individual Marine Corps orders and prescribes a unique template to provide the commander with standardized programs of instruction. As such, this order deviates from the Five Paragraph Order Format outlined in reference (b).

4. Recommendations. Recommended changes to this order are invited and will be submitted via the syllabus sponsor and the appropriate chain of command to: Commanding General, Training and Education Command (C 4610), Marine Corps Combat Development Command, 3300 Russell Road, Quantico, VA 22134-5001.

5. Reserve Applicability. This manual is applicable to the Marine Corps total force.

6. Certification. Reviewed and approved this date.

EDWARD HANLON, JR.
By direction

DISTRIBUTION: PCN 10203358600

Copy to: 7000110 (55)
7000144/8145001 (1)
7230080 (10)

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

LOCATOR SHEET

Subj: AVIATION TRAINING AND READINESS (T&R) MANUAL, METEOROLOGY AND OCEANOGRAPHY (METOC) SERVICES (SHORT TITLE: T&R MANUAL, METOC)

Location: _____
(Indicate location(s) of copy(ies) of this Manual.)

T&R MANUAL, METOC

RECORD OF CHANGES

Log completed change action as indicated.

Change Number	Date of Change	Date Entered	Signature of Person Incorporated Change

CONTENTS

CHAPTER 1

APPRENTICE METOC ANALYST – 6821

FIGURES

TABLES

CHAPTER 1

APPRENTICE METOC ANALYST – 6821

100. CORE COMPETENCIES/SKILLS

1. Meteorological and Oceanographic (METOC) Unit Mission. The mission of the Marine Corps METOC Unit is to provide meteorological, oceanographic, and space environmental information, products, and services required in support of joint, combined, and Marine Corps operations as directed.

2. Mission Essential Task List (METL)

a. Collect, record, and disseminate METOC parameters in support of joint, combined, and Marine Corps operations.

b. Analyze, evaluate, and forecast METOC parameters in support of joint, combined, and Marine Corps operations.

c. Assess and disseminate METOC impacts to weapons systems in support of joint, combined, and Marine Corps operations.

3. METOC Core Capability

a. Core competent aviation METOC units are capable of:

(1) Supporting continuous (24/7) aviation operations based from a forward operating base (FOB) with remote atmospheric sensing capabilities for up to two Forward Arming and Refueling Points (FARP).

(2) Providing continuous (24/7) environmental support to CONUS and OCONUS garrison Marine Corps Air Stations and Facilities in the form of seamless METOC surface and upper air observations and forecasts out to 96 hours.

(3) Providing timely and accurate weather warnings to local bases and stations for protecting resources.

b. Core competent METOC Support Teams (MST) are capable of:

(1) Providing continuous METOC support to non-aviation elements of the MAGTF during planning, execution, and debrief of all missions.

(2) Providing mission and task organized, rapidly deployable METOC capabilities that enhance the unit commander's ability to exploit the environment and facilitate mission success.

101. PROGRAMS OF INSTRUCTION (POI) FOR BASIC AND TRANSITION APPRENTICE METOC ANALYST

WEEKS	COURSE/PHASE	ACTIVITY
1-11	MARINE CORPS WEATHER OBSERVER/COMBAT CAPABLE	KEESLER AFB, MS
12-25	OBSERVER CERTIFICATION/COMBAT CAPABLE	LOCAL METOC
26-47	COMBAT READY TRAINING	LOCAL METOC
48-64	COMBAT QUALIFICATION TRAINING	LOCAL METOC

65-WC FULL COMBAT QUALIFICATION TRAINING LOCAL METOC

102. PROGRAM OF INSTRUCTION (POI) FOR RESERVE APPRENTICE METOC ANALYST

WEEKS	COURSE/PHASE	ACTIVITY
1-11	MARINE CORPS WEATHER OBSERVER/COMBAT CAPABLE	KEESLER AFB, MS
12-25	OBSERVER CERTIFICATION/COMBAT CAPABLE	LOCAL METOC
26-47	COMBAT READY TRAINING	LOCAL METOC
48-64	COMBAT QUALIFICATION TRAINING	LOCAL METOC
65-WC	FULL COMBAT QUALIFICATION TRAINING	LOCAL METOC

103. SUMMARY/INDEX OF LIVE/SIMULATED EVENTS. Tables 1-1 thru 1-4 contain listings of the Apprentice METOC Analyst's Combat Capable, Combat Ready, Combat Qualification and Full Qualification training events with associated page numbers.

Table 1-1.--Apprentice METOC Analyst Combat Capable Training Events.

EVENT	GOAL	PAGE
FAM-100	Familiarization basic meteorology	1-15
FAM-101	Familiarization with intermediate meteorology and oceanography	1-15
FAM-102	Familiarization with observations	1-16
FAM-103	Familiarization with the training and readiness manual	1-16
EFT-104	To certify knowledge of training and readiness manual	1-17
EFT-105	Familiarization with basic computer operations	1-17
EFT-106	Familiarization with meteorological satellites	1-18
EFT-107	Familiarization with advanced meteorology	1-18
EFT-108	Familiarization with meteorological chart analysis	1-19
EFT-109	Familiarization with meteorological equipment	1-19
EFT-110	Familiarization with advanced computer analysis	1-19
EFT-111	Familiarization with Doppler radar fundamentals and interpretation	1-20
EFT-112	Familiarization with routine METOC product processing	1-20
EFT-113	Familiarization with weather feature prognosis techniques	1-21
EFT-114	Familiarization with forecasting techniques and procedures	1-21
EFT-115	Familiarization with application of meteorological theories	1-21
ACP-116	Certify knowledge of METOC Standard Operating Procedures (SOP)	1-23
ACP-117	Certify knowledge of METOC mission	1-23
ACP-118	Certify knowledge of orders and directives governing METOC support	1-23
ACP-119	Certify knowledge of the quality assurance program	1-24
ACP-120	Complete security clearance/access request	1-24
ACP-121	Certify knowledge of security requirements	1-24
ACP-122	Certify knowledge of communication configurations and procedures	1-25
ACP-123	Certify knowledge of garrison METOC equipment	1-25

Table 1-1.--Apprentice METOC Analyst Combat Capable Training Events--Continued.

EVENT	GOAL	PAGE
ACP-124	Certify knowledge of tactical METOC equipment	1-25
ACP-125	Certify proficiency at operating hand-held meteorological devices	1-26
ACP-126	Certify knowledge of METOC software applications	1-26
ACP-127	Certify knowledge of locally generated METOC support products	1-26
ACP-128	Certify proficiency at weather warning dissemination procedures	1-27
ACP-129	Certify knowledge of dynamic meteorology fundamentals	1-27
ACP-130	Certify knowledge of surface observation fundamentals	1-28
ACP-131	Certify proficiency at Automated Surface Observing System (ASOS) system commands	1-28
ACP-132	Certify proficiency at ASOS observing procedures	1-28
ACP-133	Certify proficiency at manual sensing equipment operations	1-29
ACP-134	Certify knowledge of computed value procedures	1-30
ACP-135	Certify proficiency at calculating pressure altitude	1-30
ACP-136	Certify proficiency at calculating density altitude	1-30
ACP-137	Certify proficiency at wet bulb globe temperature index	1-31
ACP-138	Certify proficiency at electronic WBGTI operations	1-31
ACP-139	Certify proficiency at calculating wind chill temperatures	1-31
ACP-140	Certify proficiency at lightning detection equipment operation	1-32
ACP-141	Certify knowledge of basic meteorological radar operations	1-32
ACP-142	Certify knowledge of Doppler radar products	1-32
ACP-143	Certify knowledge of upper air messages and the Skew-T Log P diagram	1-33
ACP-144	Certify proficiency at plotting and analyzing a Skew-T Log P diagram	1-33
ACP-145	Certify proficiency at plotting warnings	1-34
ACP-146	Certify proficiency at plotting a local area work chart (LAWC)	1-34
ACP-147	Certify knowledge of ceiling balloon operations	1-34
ACP-148	Certify pilot balloon (PIBAL) procedures and equipment	1-34
ACP-149	Certify proficiency at conducting PIBALS	1-35
ACP-150	Certify proficiency at pilot report (PIREP) procedures	1-35
ACP-151	Certify knowledge of METOC reports	1-35
ACP-152	Certify proficiency at calculating astronomical data	1-36
ACP-153	Certify proficiency at calculating tidal data	1-36
AMO-155	Conduct weather watch functions	1-37

Table 1-2.--Apprentice METOC Analyst Combat Ready Training Events.

EVENT	GOAL	PAGE
AFM-200	Introduce the elements and terms used in surf observations	1-37
AFM-201	Introduce upper air observational equipment and procedures	1-38
AFM-202	Introduce subsystems inherent to the METMF(R)	1-38
AFM-203	Introduce locally generated forecast products	1-39
AFM-204	Introduce locally generated reports and messages	1-40
AFM-205	Introduce graphical METOC products	1-40
AFM-206	Introduce flight weather products	1-41
AFM-207	Introduce oceanographic/littoral warfare products	1-41
AFM-208	Introduce tactical decision aid (TDA) products	1-41
AFM-209	Introduce elements forecasted from a Skew-T Log P diagram	1-42
AFM-210	Introduce weather warning and advisory issuance criteria and procedures	1-42
AMO-211	Develop proficiency at establishing tactical observation operations	1-43
AMO-212	Develop proficiency at utilizing tactical automated sensing equipment	1-43
AMO-213	Develop proficiency at conducting surf observations	1-44
AMO-214	Develop proficiency at METMF(R) power operations	1-44
AMO-215	Develop proficiency at METMF(R) deployment procedures	1-44
AMO-216	Develop proficiency at upper air observation operations	1-45
AMO-217	Generate astronomical, tidal, and climatological data	1-45
AMO-218	Compute modified surf index (MSI)	1-45
AMO-219	Generate optimum path aircraft routing system (OPARS) products	1-46
AMO-220	Generate meteorological and oceanographic charts	1-46
AMO-221	Demonstrate knowledge of security procedures	1-46
AMO-222	Display operating knowledge of tactical satellite system(s)	1-47
AMO-223	Display operating knowledge of tactical Doppler radar system	1-47
AMO-224	Conduct limited METOC operations utilizing man portable METOC equipment	1-47
AMO-225	Operate the garrison Doppler radar system	1-48
AMO-226	Install a wet bulb temperature index (WBGTI) set	1-48
AMO-227	Perform basic surface chart analysis	1-48
AMO-228	Perform basic thickness chart analysis	1-49
AMO-229	Perform basic upper atmospheric chart analysis	1-49
AMO-230	Perform basic satellite imagery analysis	1-49
AMO-231	Perform basic radar imagery analysis	1-50
CMO-232	Generate tactical decision aids in support of METOC assessment operations	1-50

Table 1-3.--Apprentice METOC Analyst Combat Qualification Training Events.

EVENT	GOAL	PAGE
AMO-300	Conduct watch turnover procedures	1-51
AMO-301	Conduct logistical support functions	1-51
AMO-302	Conduct forward area limited observational program (FALOP)	1-51
AMO-303	Maintain METOC data in central server database	1-52
AMO-304	Operate HF/VHF/UHF/SHF communication devices	1-52
AMO-305	Perform security procedures	1-52
AMO-306	Perform advanced meteorological radar operations	1-53
AMO-307	Perform advanced satellite system operations	1-53
AMO-308	Identify meteorological features on satellite imagery	1-54
AMO-309	Identify meteorological features on radar imagery	1-54
FST-310	Demonstrate knowledge of atmospheric physics	1-55
FST-311	Demonstrate knowledge of atmospheric dynamics	1-55
FST-312	State the advantages/disadvantages and analysis techniques of meteorological satellite imagery	1-56
FST-313	Introduce theories of atmospheric dynamics and physics application through synoptic scale analysis	1-56
FST-314	Introduce synoptic scale forecasting and prognosis techniques	1-57
FST-315	Introduce global and regional METOC model data	1-57
FST-316	Introduce weather element forecasting techniques	1-58
FST-317	Introduce forecasting convective and non-convective severe weather techniques	1-58
FST-318	Introduce aviation weather forecasting techniques and procedures	1-58
FST-319	Introduce weather warning and advisory criteria	1-59
FST-320	Brief a METOC chart set	1-59
FST-321	Certify knowledge of local area forecast content and format	1-59
FST-322	Certify knowledge of terminal aerodrome forecast content and format	1-60
FST-323	Introduce flight weather briefing knowledge	1-60
FST-324	Certify knowledge of flight weather packets	1-61
FST-325	Draft and conduct a climatological brief	1-61

Table 1-4.--Apprentice METOC Analyst Full Combat Qualification Training Events.

EVENT	GOAL	PAGE
AMO-400	Conduct tower visibility observer training	1-62
AMO-401	Conduct intermediate networking	1-62
AMO-402	Perform quality assurance check on observational, climatological, tidal, and station reports.	1-63
AMO-403	Implement established embarkation procedures for the METMF(R)	1-63

Table 1-4.--Apprentice METOC Analyst Full Combat Qualification Training Events--Continued.

EVENT	GOAL	PAGE
AMO-404	Maintain meteorological data in central server database	1-64
AMO-405	Generate a METOC capabilities briefing	1-64
FSC-406	To certify knowledge of atmospheric fundamentals	1-65
FSC-407	To certify knowledge of analyzing and interpreting upper atmospheric weather charts	1-66
FSC-408	To certify knowledge of analyzing and interpreting a surface chart	1-66
FSC-409	To certify knowledge of analyzing and interpreting a thickness chart	1-67
FSC-410	To certify knowledge of analyzing and interpreting a vorticity chart	1-67
FSC-411	To certify knowledge of conducting a streamline analysis	1-67
FSC-412	To certify knowledge of analyzing and forecasting atmospheric conditions from the Skew-T Log P diagram	1-68
FSC-413	To certify knowledge of applied meteorological reasoning in the forecasting of movement and intensity of synoptic scale features	1-68
FSC-414	To certify knowledge of forecasting severe weather	1-69
FSC-415	To certify briefing of METOC features from (re)analyzed products	1-69
FSC-416	To certify knowledge of terminal aerodrome forecast (TAF) content and forecast	1-70
FSC-417	To certify knowledge of weather warnings	1-70
FSC-418	To certify knowledge of flight weather briefing	1-71
FSC-419	To certify knowledge of flight weather packets	1-72
FSC-420	To certify knowledge of verifying meteorological model output	1-72
FSO-421	Conduct forecast support operations	1-73
FSO-422	Receive recommendation for attendance to MOAF course	1-73

104. SUMMARY/INDEX OF REQUIREMENTS/DESIGNATIONS AND QUALIFICATIONS. Table 1-5 contains a listing of the events for requirements, qualifications, and designations with associated page numbers.

Table 1-5.--Requirements, Qualification, Designation List.

EVENT	GOAL	PAGE
SEC-600	Tracking code for secret clearance	1-74
SEC-601	Tracking code for top secret clearance	1-74
ACA-602	Enroll and complete the Aerographer’s Module 1	1-74
ACA-603	Enroll and complete the Aerographer’s Module 2	1-74
ACA-604	Enroll and complete the principles of Oceanography	1-75

Table 1-5.--Requirements, Qualification, Designation List--Continued.

EVENT	GOAL	PAGE
ACA-605	Enroll and complete the Aerographer’s Module 3	1-75
ACA-606	Enroll and complete the Aerographer’s Module 4	1-75
ACA-607	Enroll and complete the Aerographer’s Module 5	1-75
ACA-608	Enroll and complete introduction to forecasting	1-76
ACA-609	Obtain qualification as an Apprentice METOC Analyst	1-76
ACA-611	Obtain forecast support qualification	1-76
ACA-612	Designation of lead METOC apprentice	1-77

110. ACADEMIC TRAINING

1. General. Meteorological and oceanographic support revolves around products derived from raw data that will be plotted, analyzed, and interrogated using analytical rigor based on knowledge and application of meteorological theories, rules of thumb and computer model algorithms. In order to become proficient within the METOC structure, all 6800 personnel receive academic training in meteorological and oceanographic sciences.

2. Pre-requisites

a. The Military Occupational Specialties (MOS) Manual (MCO P1200.7) outlines the requirements for all MOS(s) in the Marine Corps.

b. Personnel in the 6821 MOS transition to the 6842 MOS through attendance and completion of the Meteorological and Oceanographic Analyst/Forecaster (MOAF) course aboard Keesler AFB, MS. Successful completion of the following pre-requisites are required in order to attend the course:

(1) Oceanography Course (Event: ACA 604).

(2) Aerographer’s Mate Module 5 Course (Event: ACA-607) or Marine Corps Distance Learning Course Basic Meteorology – DT68005.

(3) Introduction to Forecasting Course (Event: ACA-608).

(4) Final Top Secret Clearance adjudicated by DONCAF. (Event: SEC-601).

(5) Apprentice METOC Analyst Qualification (Event: QAL-609).

(6) Forecast Support Qualification (Event: QAL-611).

(7) Lead METOC Designation preferred (Event: DES-612).

(8) Recommendation for MOAF attendance (Event: FSO-422).

3. Security. All personnel assigned the 6821 MOS are required to be eligible for top secret clearance per the MOS Manual.

4. Academic training. Formal academic training courses are required to ensure uniform levels of training in core competencies and skills. Formal

schools are schools that receive Navy and Marine Corps educational funding and have approved syllabi.

a. Coding

(1) Formal schools are coded by the Course Identification Number (CIN) for Navy courses and Course Identification (CID) for Marine Corps courses.

(2) Informal course materials are coded to facilitate inclusion in the events.

b. Formal courses. Formal courses required for completion of the Basic Program of instruction (POI) are:

(1) the Marine Corps Weather Observer Course, or

(2) the Air Force Weather Apprentice Course.

c. Supplemental Courses. A listing of academic courses available to enhance the syllabus or required to complete the syllabus are listed in Appendix A.

5. References. Appendix B contains a listing of references utilized in the development of the training and readiness syllabus. Individual training events require adherence to the references contained within the table. Due to the comprehensive nature of the events, extensive references, and rapid changing content, including references in each event would not be prudent. Resident knowledge of the references lies within the METOC Analyst Instructor (MAI), Master METOC Analyst (MMA), and METOC officer.

120. EVENT TRAINING

1. Progression Model. Figure 1-1 depicts the training progression model for the 6821 MOS.

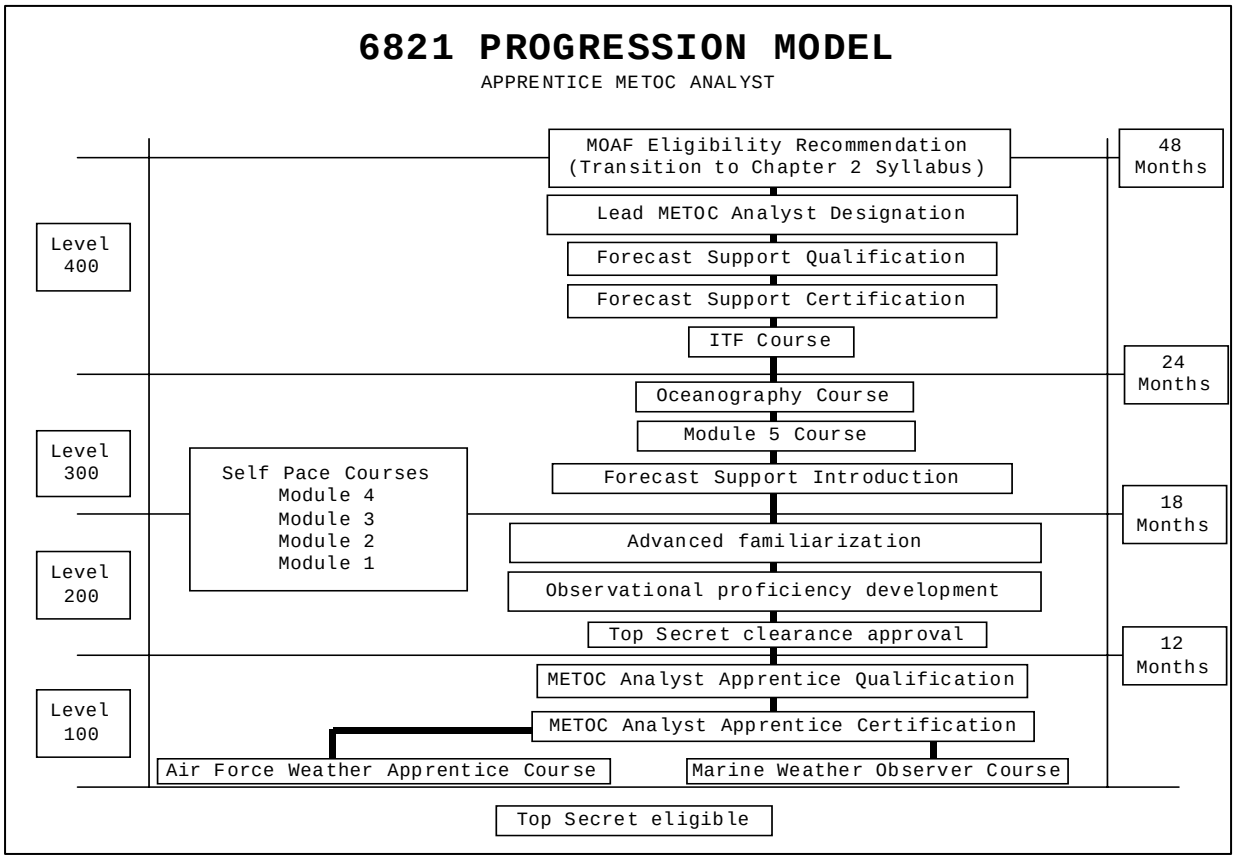


Figure 1-1.--Progression Model for 6821 Military Occupational Specialty.

121. EVENT/CRP. Table 1-6 provides a listing of the events, hours and combat readiness percentages for each stage/phase of the syllabus.

Table 1-6.--Event/CRP Breakdown Table.

COMBAT CAPABLE STAGE OF TRAINING			
STAGE	**EVENTS**	**HOURS**	**PERCENT**
FAMILIARIZATION (FAM) **or** ENHANCED FAMILIARIZATION TRAINING (EFT)	4 12	424 305.5	40 40
APPRENTICE CERTIFICATION PROCESS (ACP)	38	164	15
APPRENTICE METOC OPERATIONS (AMO)	1	180	5
COMBAT CAPABLE TOTALS:	**55**	**1073.5**	**60**
COMBAT READY STAGE OF TRAINING			
ADVANCED FAMILIARIZATION (AFM)	11	66	5
APPRENTICE METOC OPERATIONS (AMO)	21	206	10
COMBAT READY TOTALS:	**32**	**272**	**15**

Table 1-6.--Event/CRP Breakdown Table--Continued.

COMBAT QUALIFICATION STAGE OF TRAINING			
APPRENTICE METOC OPERATIONS (AMO)	10	72	10
FORECAST SUPPORT TRAINING (FST)	16	131	10
COMBAT QUALIFICATION TOTALS:	**26**	**203**	**20**
FULL COMBAT QUALIFICATION STAGE OF TRAINING			
APPRENTICE METOC OPERATIONS (AMO)	6	13	1
FORECAST SUPPORT CERTIFICATION (FSC)	15	118	2
FORECAST SUPPORT OPERATIONS (FSO)	2	61	2
FULL COMBAT QUALIFICATION TOTALS:	**23**	**192**	**5**

130. EVENT PERFORMANCE REQUIREMENTS

1. Purpose. The purpose of training and readiness (T&R) manual events is to enhance combat readiness of METOC units. Core and core plus skills are advanced through the implementation of events, approved by fleet representation, to provide a measurable and chronological advancement of skills.

2. General

a. This Manual is written to allow for local requirements and yet remain unclassified. DC AVN and CG MCCDC encourage squadrons to use the full range of tactics in the tactical manuals and adopt the latest in training requirements.

b. Live Training. Training event condition codes listed as **L** (live), **L/S** (live preferred/simulator optional) in this syllabus designate training to be conducted without the aid of simulator devices. Training not conducted in the live training environment shall be replaced with simulation where applicable as indicated in the condition code. A number of the live and simulated events require interaction with external C3 agencies. This interaction/interface is important to the individual, crew, and agency training.

c. Simulator Training. Training event condition codes listed as **S** (simulator), and **S/L** (simulator preferred/live optional) in this syllabus designate training to be conducted as indicated in the condition code. A number of the live and simulated events require interaction with external agencies. This interaction/interface is important to the individual, crew, and agency training.

3. Evaluation of Training. Evaluation will be conducted by either written/oral examination or a combination of the two means. Operational and system related subjects will be evaluated by practical application means whenever possible. At the commanders' discretion, a Marine may receive credit for task completion through an oral explanation of the steps rather than by performing the task.

4. Implementation

a. Unit commanders are the designating authority. Unit commanders may further delegate, in writing, designation authority to the METOC Officer in Charge (OIC) or senior Staff Non-commissioned in charge in the absence of a METOC Officer. Assigning completion credit for events resides with the designating authority and may be delegated as outlined.

b. Events shall be conducted by the designated trainee and administered, evaluated, and documented (once completed) by the designating authority.

c. Documentation and tracking of event completion and progression will be completed by use of the ATRIMS program and in individual training jackets.

5. Components of a T&R Event. An event contained within a T&R Manual is an individual or collective training standard and the following elements, dependent on the tier in which they are contained:

1/	2/	3/	4/	5/	6/	7/
SAM-XXX	0.5	T,C,R,	E	EQUIP	L/S	(NS)

Goal. State the terminal-learning objective.

Requirement. List the specific tasks for the event; indicate what the crew/individual must accomplish.

Performance Standard. Describe the measurable level of proficiency for that core competency/skill.

Prerequisite. Provides a listing of academic training or other T&R events that must be completed before satisfying the task.

External Syllabus Support. A listing or description of the external support requirements that may be required to satisfy the completion of the task. May include range requirements, support aircraft, targets, training devices, or other personnel and equipment.

NOTES:

1/ Events are coded per Appendix B of Aviation T&R Program Manual.

2/ Projected event duration is furnished as a planning tool.

3/ Denotes the applicable Program of Instruction (Basic POI is understood), Z is reserve, R is refresher.

4/ An "**E**" indicates an Evaluated event.

5/ The equipment or activity subcategory is listed **GE** = Garrison Equipment; **M** = METMF(R); **N** = NITES IV; **C** = Computer System

6/ Requirement Code: **L** = live Training; **S** = simulator training; **L/S** = live preferred/simulator optional; **S/L** = simulator preferred/live optional; **N** = Night; Where contained within **()** denotes optional conditions.

7/ Elements of the events may be deleted if not applicable to the event. (example: External Syllabus Support may be deleted if not required for the event)

6. Event Codes. Table 1-7 provides a listing of event codes utilized in Chapter 1 of the syllabus.

Table 1-7.--Event Code and Description.

Event Code	Description
FAM	FAMILIARIZATION
EFT	ENHANCED FAMILIARIZATION TRAINING
ACP	APPRENTICE CERTIFICATION PROCESS
AMO	APPRENTICE METOC OPERATIONS
AFM	ADVANCED FAMILIARIZATION TRAINING
FST	FORECAST SUPPORT TRAINING
FSC	FORECAST SUPPORT CERTIFICATION
FSO	FORECAST SUPPORT OPERATIONS
ACA	ACADEMIC TRACKING CODES
SEC	SECURITY TRACKING CODES
QAL	QUALIFICATIONS
DES	DESIGNATIONS

131. COMBAT CAPABLE TRAINING

1. Familiarization (FAM)

a. Purpose. To introduce the Basic METOC Marine to the core skills of mission knowledge, products, equipment, security, and operations required for METOC support.

b. General

(1) Administrative Notes. Events in this portion will be completed and documented at the Marine Corps Weather Observer Course held at Keesler Air Force Base, Mississippi.

(2) Prerequisites. Eligible for Secret Clearance.

(3) Crew Requirements. Basic METOC Marine, Formal Schools Instructor.

c. Academic Training

(1) Consideration is being given to the introduction of all Core Skills during the initial assession training of 6800 personnel. In order to ensure training standards reflect this consideration, two assession tracks are contained within this chapter. Currently all personnel are required to complete only the Familiarization (FAM) stage of the syllabus. Enhanced familiarization training events are for selected personnel that attend the Air Force Apprentice Forecaster Course.

(2) Academic training for each event in this phase shall be conducted by a Qualified Formal Schools Instructor.

(3) Event academic pre-requisites must be completed before the commencement of the event. No waivers for academic pre-requisites will be acceptable to ensure comprehensive knowledge of the subject.

d. Event Training

FAM-100	51	Z	E	N/A	L

Goal. Familiarization with basic meteorology.

Requirement. Receive academic training on the core meteorological skills and knowledge listed and exhibits retention of the knowledge through formal (written) testing.

(1) Heat transfer.
(2) Atmospheric physics.
(3) General circulations.
(4) Composition of the atmosphere.
(5) Winds.
(6) Pressure systems.
(7) Frontal systems.
(8) Turbulence.
(9) Cloud physics.
(10) Convective severe weather phenomena.
(11) Non-convective severe weather phenomena.
(12) Tropical weather systems.
(13) Icing.
(14) Air mass types and source regions.
(15) Weather sensitivities.
(16) Space environment.

Performance Standard. Identify and technically discuss the subjects listed. Marine must successfully pass all progress checks and exams with 70% proficiency.

Prerequisite. Academic periods of instruction.

External Syllabus Support. Marine Corps Weather Observer Course.

FAM-101	48	Z	E	N/A	L

Goal. Familiarization with intermediate meteorology and oceanography.

Requirement. Receive academic training on the core meteorological skills and knowledge listed and exhibits retention of the knowledge through formal (written) testing.

(1) Descriptive regional climatology.
(2) Heat transfer.
(3) Atmospheric physics.
(4) General circulation.
(5) Atmospheric composition.
(6) Winds.
(7) Jet streams.
(8) Advection.

(9) Cloud physics.
(10) Air mass type and source regions.
(11) Air mass modifiers.
(12) Oceanography – currents.
(13) Oceanography – vertical motions.
(14) Oceanography – waves and tides.

Performance Standard. Identify and technically discuss the subjects listed. Marine must successfully pass all progress checks and exams with 70% proficiency.

Prerequisite. Academic periods of instruction, FAM-100.

External Syllabus Support. Marine Corps Weather Observer Course.

FAM-102 68 Z E N/A L

Goal. Familiarization with observations.

Requirement. Receive academic training on the core meteorological skills and knowledge listed and exhibits retention of the knowledge through formal (written) testing.

(1) METAR requirements and procedures.
(2) Decode METAR observations.
(3) Encode pilot reports.
(4) Decode pilot reports.
(5) Decode land synoptic observations.
(6) Decode ship synoptic observations.
(7) Decode Rawinsonde reports.
(8) Air mass sounding evaluations.

Performance Standard. Identify and technically discuss the subjects listed. The Marine must successfully pass all progress checks and exams with 70% proficiency.

Prerequisite. Academic periods of instruction. FAM-100 to FAM-101.

External Syllabus Support. Marine Corps Weather Observer Course.

FAM-103 1 Z E N/A L

Goal. Familiarization with the Training and Readiness Manual.

Requirement. Exhibit knowledge of the composition and requirements associated with Training and Readiness Manual.

Performance Standard. Discuss the components, composition and procedures for completing requirements of the Training and Readiness Manual.

Prerequisite. Academic periods of instruction, FAM 100 to FAM-102.

External Syllabus Support. Marine Corps Weather Observer Course.

2. Enhanced Familiarization Training (EFT)

a. Purpose. To introduce intermediate core fundamentals of meteorological theories and principles require to collect, record, analyze, forecast and assess METOC parameters required of the Basic METOC Marine.

b. General

(1) Administrative Notes. Events in this portion are for personnel who attend the Air Force Weather Apprentice course ONLY. All other personnel can have this portion of the syllabus waived and advance to the next stage of instruction (Apprentice Certification Phase).

(2) Prerequisites. Eligible for Secret Clearance.

(3) Crew Requirements. Basic METOC Marine, Formal Schools Instructor.

c. Academic Training

(1) Consideration is being given to the introduction of all Core Skills during the initial assession training of 6800 personnel. In order to ensure training standards reflect this consideration, two assession tracks are contained within this chapter. Currently all personnel are required to complete only the Familiarization (FAM) stage of the syllabus. Enhanced familiarization training events are for selected personnel that attend the Air Force Apprentice Forecaster Course.

(2) Academic training for each event in this phase shall be conducted by a Qualified Formal Schools Instructor.

(3) Event academic prerequisites must be completed before the commencement of the event. No waivers for academic prerequisites will be acceptable to ensure comprehensive knowledge of the subject.

d. Event Training

EFT-104	1	Z	E	N/A	L

Goal. Certify knowledge of Training and Readiness Manual.

Requirement. Exhibit knowledge of the composition and requirements associated with Training and Readiness Manual.

Performance Standard. Discuss the components, composition and procedures for completing requirements of the Training and Readiness Manual.

Prerequisite. Academic periods of instruction.

External Syllabus Support. Air Force Weather Apprentice Course.

EFT-105	10	Z	E	C	L

Goal. Familiarization with basic computer operations.

Requirement. Receive academic training on basic computer operating skills and exhibit retention of the knowledge through formal (written) testing.

Performance Standard. Marine must successfully pass all progress checks and exams with 70% proficiency.

Prerequisite. Academic periods of instruction.

External Syllabus Support. Air Force Weather Apprentice Course.

EFT-106 40.5 Z E N/A L

Goal. Familiarization with meteorological satellites.

Requirement. Receive academic training on the meteorological satellite skills and knowledge listed, then exhibit retention of the knowledge through formal (written) testing.

(1) Types of meteorological satellites.
(2) Evaluation of satellite imagery features.
(3) Microwave products.
(4) Relationships of satellite data to meteorological events.
(5) Deriving wind flow from satellite imagery.

Performance Standard. Identify and technically discuss the subjects listed. Marine must successfully pass all progress checks and exams with 70% proficiency.

Prerequisite. Academic periods of instruction, EFT-105.

External Syllabus Support. Air Force Weather Apprentice Course.

EFT-107 45 Z E N/A L

Goal. Familiarization with advanced meteorology.

Requirement. Receive academic training on the advanced meteorological skills and knowledge listed and exhibit retention of the knowledge through formal (written) testing and practical application.

(1) Pressure systems.
(2) Frontal systems.
(3) Turbulence.
(4) Vorticity.
(5) Convective severe weather phenomena.
(6) Non-convective severe weather phenomena.
(7) Icing.
(8) Vertical consistency evaluation.

Performance Standard. Identify and technically discuss the subjects listed. Marine must successfully pass all progress checks and exams with 70% proficiency.

Prerequisite. Academic periods of instruction, EFT-105 to EFT-106.

External Syllabus Support. Air Force Weather Apprentice Course.

EFT-108 68 Z E N/A L

Goal. Familiarization with meteorological chart analysis.

Requirement. Receive academic training on meteorological chart analysis and exhibit retention of the knowledge through formal (written) testing and practical application.

(1) Analyze upper-air features.
(2) Analyze surface charts.

Performance Standard. Identify and technically discuss the subjects listed. Marine must successfully pass all progress checks and exams with 70% proficiency.

Prerequisite. Academic periods of instruction, EFT-105 to EFT-107.

External Syllabus Support. Air Force Weather Apprentice Course.

EFT-109 12 Z E N/A L

Goal. Familiarization with meteorological equipment.

Requirement. Receive academic training on the meteorological equipment listed. Familiarization of equipment denotes ability to identify, operate, and state the capabilities of the equipment. Upon completion of academic training, exhibit retention of the knowledge through formal (written) testing.

(1) Cloud height equipment.
(2) Visibility equipment.
(3) Wind equipment.
(4) Pressure equipment.
(5) Temperature and dewpoint equipment.
(6) Precipitation measuring equipment.
(7) Automated sensors.
(8) Organizational structure of the DOD/DCS global weather communication system.

Performance Standard. Identify and technically discuss the equipment listed per the requirement. Marine must successfully pass all progress checks and exams with 70% proficiency.

Prerequisite. Academic periods of instruction, EFT-105 to EFT-108.

External Syllabus Support. Air Force Weather Apprentice Course.

EFT-110 12 Z E N/A L

Goal. Familiarization with advanced computer analysis.

Requirement. Receive academic training on the advanced meteorological computer analysis techniques listed. Upon completion, exhibit retention of the knowledge through formal (written) testing and practical application.

(1) Navigate the operating system.

(2) Software applications.
(3) Depict wind flow on satellite imagery.
(4) Analyze thickness features.
(5) Perform streamline analysis.
(6) Reanalyze computer surface products.
(7) Reanalyze computer upper air products.

Performance Standard. Identify and technically discuss the subjects listed. Marine must successfully pass all progress checks and exams with 70% proficiency.

Prerequisite. Academic periods of instruction, EFT-105 to EFT-109.

External Syllabus Support. Air Force Weather Apprentice Course.

EFT-111 40.5 Z E N/A L

Goal. Familiarization with Doppler radar fundamentals and interpretation.

Requirement. Receive academic training on the Doppler radar fundamentals and image assessment skills and knowledge listed. Exhibit retention of the knowledge through formal (written) testing and practical application.

(1) Weather radar theories.
(2) Radar system concepts.
(3) Radar products.
(4) Radar product assessment.
(5) Identification of radar features.

Performance Standard. Identify and technically discuss the subjects listed. Marine must successfully pass all progress checks and exams with 70% proficiency.

Prerequisite. Academic periods of instruction, EFT-105 to EFT-110.

External Syllabus Support. Air Force Weather Apprentice Course.

EFT-112 40.5 Z E N/A L

Goal. Familiarization with routine METOC product processing.

Requirement. Receive academic training on the routine METOC product processes listed. Exhibit retention of the knowledge through formal (written) testing and practical application.

(1) Decode a Terminal Aerodrome Forecast (TAF).
(2) Decode numerical forecast products.
(3) Extract climatological data.
(4) Interpret numerical weather prediction products (text).
(5) Interpret numerical weather prediction products (fine scale model visualization).
(6) Evaluate weather cross-section products.

Performance Standard. Be able to identify and technically discuss the processes and procedures listed. Marine must successfully pass all progress checks and exams with 70% proficiency..

Prerequisite. Academic periods of instruction, EFT-105 to EFT-111.

External Syllabus Support. Air Force Weather Apprentice Course.

EFT-113 12 Z E N/A L

Goal. Familiarization with weather feature prognosis techniques.

Requirement. Receive academic training on the weather feature prognosis techniques listed and exhibit retention of the knowledge through formal (written) testing and practical application.

(1) Surface weather features prognosis.
(2) Upper air weather feature prognosis.
(3) Components of an effective regime forecast process.

Performance Standard. Identify and technically discuss the subjects listed. Must successfully achieve 70% proficiency on end of block testing.

Prerequisite. Academic periods of instruction, EFT-105 to EFT-112.

External Syllabus Support. Air Force Weather Apprentice Course.

EFT-114 12 Z E N/A L

Goal. Familiarization with forecasting techniques and procedures.

Requirement. Receive academic training on the forecasting techniques and procedures listed. Exhibit retention of the knowledge through formal (written) testing and practical application.

(1) Forecast sounding evaluation.
(2) Forecast weather elements (synoptic scale).
(3) Forecast weather elements (mesoscale).
(4) Forecast weather elements (convective).
(5) Forecast weather elements (non-convective).

Performance Standard. Identify and technically discuss the subjects listed. Marine must successfully pass all progress checks and exams with 70% proficiency.

Prerequisite. Academic periods of instruction, EFT-105 to EFT-113.

External Syllabus Support. Air Force Weather Apprentice Course.

EFT-115 12 Z E N/A L/S

Goal. Familiarization with the application of meteorological theories and dynamics.

Requirement. Perform the listed tasks within a live laboratory environment simulating operations at a garrison weather facility.

(1) Perform quality assurance.
(2) Operate pilot to Metro radio.
(3) Encode PIREPS.

(4) Prepare Terminal aerodrome forecast (TAF).
(5) Encode TAFS.
(6) Prepare a route forecast.
(7) Prepare a range forecast.
(8) Prepare weather warnings.
(9) Prepare weather advisories.
(10) Prepare and brief flight weather products.
(11) Prepare and brief watch changeover briefs.

Performance Standard. Identify and technically discuss the subjects listed. Marine must successfully pass all progress checks and exams with 70% proficiency.

Prerequisite. Academic periods of instruction, EFT-105 to EFT-114.

External Syllabus Support. Air Force Weather Apprentice Course.

3. Apprentice Certification Process (ACP)

a. Purpose. To certify the retention of initial assession knowledge before the qualification of a Basic METOC Marine as a Apprentice METOC Analyst. Personnel shall also be introduced to command specific knowledge during this stage.

b. General

(1) Administrative Notes

(a) Events in this portion will be completed after assignment to the first METOC unit upon graduation of the initial assession formal training (Marine Corps Weather Observer Course (FAM) or Air Force Weather Apprentice Course (EFT)).

(b) The Marine shall not receive signature authority for observational elements until completion of the ACP stage, completion of the QAL-609 event, and has received letter of qualification from the designated authority.

(2) Tracking. To assist local commands in tracking and to ensure continuity of training by all METOC units, all units shall utilize the Apprentice Certification Checklist. The checklist is contained as Appendix C of this Manual. Upon completion of the checklist, which covers the events, the checklist shall be forwarded to the Master METOC Analyst for convening of the METOC Analyst Qualification board.

(3) Prerequisites. Eligible for Secret clearance.

(4) Crew Requirements. Basic METOC Marine and Qualified METOC Analyst Instructor (MAI).

c. Academic Training

(1) Academic training (POIs and TMIs) for each event in this phase shall be conducted by a qualified MAI.

(2) Event academic prerequisites must be completed prior to the commencement of the event. No waivers for academic prerequisites will be accepted to ensure comprehensive knowledge of the subject.

d. Event Training

ACP-116	1	Z	E	N/A	L

Goal. Certify knowledge of METOC standard operating procedures (SOP).

Requirement. Review SOP and security SOP with MAI. Demonstrate the knowledge of the SOP by stating, at a minimum, the information listed. Local commands shall establish local requirements to complete this event.

(1) Local security procedures.
(2) Airfield description.
(3) Watch routine.
(4) METOC equipment.
(5) Command structure.
(6) Warning criteria/procedures.

Performance Standard. Complete a verbal/written test on the local SOP with 80% accuracy.

Prerequisite. The student shall read and comprehend local SOP and local security SOP.

ACP-117	1	Z	E	N/A	L

Goal. Certify knowledge of METOC missions.

Requirement. Review MCWP 3-35.7 and SOP with MAI. State the mission and composition of each echelon of MAGTF METOC support.

(1) Marine Corps METOC community.
(2) Local METOC mission.
(3) Apprentice METOC Analyst mission.
(4) Airfield Operations.
(5) Marine Corps Aviation.
(6) Deployable METOC units.
    (a) MWSS.
    (b) MST.

Performance Standard. Without error or aid of reference complete the requirement.

Prerequisite. Academic training. Read and comprehend MCWP 3-35.7 and SOP.

ACP-118	1	Z	E	N/A	L

Goal. Certify knowledge of orders and directives governing METOC support.

Requirement. Review listed items with MAI. Demonstrate the required knowledge level of the following orders and directives:

(1) Desktop procedures.

(2) NAVMETOCCOMINST 3141.2 Surface METAR Observation User's Manual.
(3) OPNAVINST 3140.24(_) Warning and Conditions of Readiness.
(4) NAVMETOCCOMINST 3142.1(_) Pilot Reports.
(5) OPNAVINST 3710.7(_) NATOPS Manual.
(6) Local Destructive Weather Order.
(7) MCWP 3-35.7 MAGTF METOC Support.

Performance Standard. Complete a verbal/written test on the orders and directives with 80% accuracy.

Prerequisite. Academic training. Read and comprehend listed orders and directives.

ACP-119 1 Z E N/A L

Goal. Certify knowledge of the quality assurance (QA) program.

Requirement. Review QA program with MAI. State and discuss the roles, implementation and purpose of the quality assurance program

Performance Standard. Without error, state the responsibilities of the Apprentice METOC Analyst within the conscribes of the program.

Prerequisite. Academic training. Read and comprehend QA program.

ACP-120 6 Z E N/A L

Goal. Complete security clearance/access request.

Requirement. Complete procedures required for applying for security clearance and access.

(1) Attend command security indoctrination briefing.
(2) Attend required security training as denoted in the references.
(3) Complete required paperwork (electronic/manual) required for submission of security clearance request.
(4) Define and state the responsibilities pertaining to the Emergency Action Plan.

Performance Standard. Satisfactory completion of this event will be met when individual has attended required training and has been granted an interim Secret Clearance.

Prerequisite. Academic training. Read and comprehend security SOP.

External Syllabus Support. Security in-doctrination briefing.

ACP-121 68 Z E N/A L

Goal. Certify knowledge of security requirements.

Requirement

(1) Read and comprehend local security standing operating procedures.
(2) Define and state responsibilities pertaining to the listed security programs.

(a) Physical security program.
(b) Information security program.
(c) Personal security program.
(d) Communications security program.

Performance Standard. Must pass a written or verbal test with a 80% accuracy.

Prerequisite. Academic training. Security indoctrination briefing. Read and comprehend security SOP.

External Syllabus Support. Academic training. Read and comprehends security SOP.

ACP-122 1 Z E GE,TE L

Goal. Certify knowledge of communication configurations and procedures.

Requirement. Demonstrate knowledge of communication configurations and procedures by identifying and then discussing the procedures for utilizing the listed items:

(1) Telephone procedures.
    (a) Recalls.
    (b) Secure communications.
(2) Telephone access numbers.
(3) Command and facsimile numbers.
(4) Pilot to METRO frequencies and procedures.
(5) Email address and responsibilities.
(6) Tower radio/phone procedures.

Performance Standard. Complete a verbal/written test on the local Standard Operating Procedures regarding communications with 80% accuracy.

Prerequisite. Marine Corps Weather Observer Course.

ACP-123 1 Z E GE L

Goal. Certify knowledge of garrison METOC equipment.

Requirement. Physically or verbally, identify the location, nomenclature, and capabilities of garrison primary and secondary equipment used in METOC support missions.

Performance Standard. Must achieve a proficiency of 80% or greater on a written or verbal test.

Prerequisite. Marine Corps Weather Observer Course.

ACP-124 1 Z E TE L

Goal. Certify knowledge of tactical METOC equipment.

Requirement. Physically or verbally identify the location, nomenclature, and capabilities of primary and secondary tactical equipment used in METOC support missions.

Performance Standard. Must achieve a proficiency of 80% or greater on a written or verbal test.

Prerequisite. Marine Corps Weather Observer Course.

ACP-125	3	Z	E	N	L

Goal. Certify proficiency at operating handheld meteorological devices.

Requirement. Exhibit working knowledge of all handheld sensing devices indigenous to the unit by conducting sensing of environmental elements utilizing the devices. (Devices may vary from site to site, units commanders shall identify devices to evaluate SNM on)

(1) Wind sensing devices.
(2) Pressure sensing devices.
(3) Temperature sensing devices.

Performance Standard. Conduct sensing of environmental elements utilizing the handheld device(s) without error.

Prerequisite. Marine Corps Weather Observer Course.

ACP-126	3	Z	E	GE,TE,N	L

Goal. Certify knowledge of METOC software applications.

Requirement. State the software used by METOC units and discuss the output of each software suite. The Marine shall, at a minimum, identify the use of the following suites:

(1) Tactical decision aids.
(2) METOC applications.
(3) Command and Control (C2) applications.
(4) Geospatial applications.

Performance Standard. Tested, verbally or written, on applications. Responses must be in accordance with applicable orders.

Prerequisite. Marine Corps Weather Observer Course.

ACP-127	6	Z	E	C	L

Goal. Certify knowledge of locally generated METOC support products.

Requirement. Identify the locally prepared products listed and discuss the content thereof:

(1) Terminal Aerodrome Forecast.
(2) Horizontal weather depiction.
(3) Flight Weather Briefing package.
(4) DD 175-1 Flight Weather Briefing.
(5) Daily Weather Forecast.
(6) Chemical Downwind Message.
(7) Astronomical Data.
(8) Tidal Data.
(9) Climatological Data.

(10) Surf Forecasts.
(11) Surface Observations.
(12) Upper Air Observations.
(13) Blast Forecast.
(14) Drop Zone Forecast.

Performance Standard. Tested, verbally or written, on products and content. Responses must be in accordance with applicable orders.

Prerequisite. Marine Corps Weather Observer Course.

ACP-128	1	Z	E	C	L/S

Goal. Certify proficiency at weather warning dissemination procedures.

Requirement. Upon receipt of a weather warning or advisory (live or simulated), disseminate the weather warning or advisories.

Performance Standard. Disseminate the weather warning or advisory to all units in accordance with local policies and procedures.

Prerequisite. Marine Corps Weather Observer Course.

ACP-129	12	Z	E	C	L

Goal. Certify knowledge of dynamic meteorology fundamentals.

Requirement. Discuss with the MAI the listed topics/subjects and respond to questions posed by the MAI:

(1) Earth-sun relationship.
(2) Greenhouse effect.
(3) Insolation.
(4) Inversion.
(5) Temperature scales.
(6) Climate controls.
(7) Air masses.
(8) Pressure/density altitude.
(9) Synoptic scale features.
(10) Stages of tropical systems.
(11) Cloud formation.
(12) Precipitation.
(13) Hydrometers.
(14) Lithometers.
(15) Electrometers.
(16) Photometers.
(17) Wind.
(18) Tornadoes.
(19) Thunderstorm.
(20) Synoptic Scale Circulation Patterns.
(21) Mesoscale and Microscale Circulation.
(22) Mesoscale and Microscale Features.

Performance Standard. Evaluation of knowledge can be obtained through oral or written exam. The MAI shall determine successful completion of the event.

Prerequisite. Marine Corps Weather Observer Course.

ACP-130 2 Z E C L

Goal. Certify knowledge of surface observation fundamentals.

Requirement. Receive training on the topics listed. Discuss, in detail, the elements that comprise a surface observation. The discussion will include rules governing taking and observing the elements, the conversion or computation (as required), and encoding.

(1) Sky condition.
(2) Visibility.
(3) Weather and obstructions to vision.
(4) Pressure.
(5) Temperature.
(6) Wind.
(7) Remarks/additive data.
(8) Special Criteria.
(9) Local Criteria

Performance Standard. Evaluation of knowledge can be obtained through oral or written exam. Responses must be in accordance with applicable references. The MAI shall determine successful completion of the event.

Prerequisites. Marine Corps Weather Observer Course.

ACP-131 2 Z E GE L

Goal. Certify proficiency at Automated Surface Observing System (ASOS) system commands.

Requirement. Given an ASOS system and observing knowledge, exhibit the ability to operate the automated site observing system to retrieve, archive, and adjust weather elements to ensure most accurate weather information is provided. Perform the following:

(1) Power on system.
(2) Log on as user.
(3) Manipulate software to display desired product.
(4) Manipulate software to alter automated products when required.
(5) Ensure archiving of data is achieved.

Performance Standard. Without aid of reference complete the requirement.

Prerequisite. Marine Corps Weather Observer Course.

ACP-132 50 Z E GE L

Goal. Certify proficiency at ASOS observing procedures.

Requirement. Evaluate, record and decode elements from automated sensing equipment under supervision. Perform the following:

(1) Determine and record type of observation.
(2) Record time of observation.

(3) Verify and record wind direction, speed, character, and significant wind events.
(4) Evaluate, verify and record visibility.
    (a) Types and direction of obscuring phenomena.
    (b) Types and intensity of weather.
(5) Determine and record sky condition.
    (a) Cloud type.
    (b) Cloud height.
    (c) Cloud direction and movement.
    (d) Cloud amount.
(6) Read and record dry bulb and dew point temperatures.
(7) Read and record current altimeter setting.
(8) Encode and record applicable remarks.
(9) Read and record station pressure.
(10) Read and record sea level pressure.
(11) Proof read recorded elements.
(12) Initial observation, confirming accuracy of report.
(13) Record summary of the day.

Performance Standard. In accordance with the reference, evaluate and record the following elements 200 times with an accuracy rate of 97.0%: winds, temperatures, pressure, visibility, current weather, and sky condition. 50% of the total observations must take place in a nighttime environment.

Prerequisite. Marine Corps Weather Observer Course.

ACP-133	50	Z	E	GE,TE	L

Goal. Certify proficiency at manual sensing equipment operations.

Requirement. Evaluate, record and decode elements from manual sensing equipment under supervision. Perform the following:

(1) Determine and record type of observation.
(2) Record time of observation.
(3) Determine and record wind direction, speed, character, and significant wind events.
(4) Evaluate, verify and record visibility.
    (a) Types and direction of obscuring phenomena.
    (b) Types and intensity of weather.
(5) Determine and record sky condition.
    (a) Cloud type.
    (b) Cloud height.
    (c) Cloud direction and movement.
    (d) Cloud amount.
(6) Determine and record, dry bulb and wet bulb temperatures.
(7) Calculate dew point temperature.
(8) Determine and record current altimeter setting.
(9) Encode and record applicable remarks.
(10) Determine and record station pressure.
(11) Determine and record sea level pressure.
(12) Proof read recorded elements.
(13) Initial observation, confirming accuracy of report.
(14) Determine and record summary of the day.

Performance Standard. In accordance with the reference, evaluate and record the following elements 200 times with an accuracy rate of 97.0%: wind, temperature, pressure, visibility, current weather, and sky condition. 50% of the total observations must take place in a nighttime environment.

Prerequisite. Marine Corps Weather Observer Course.

ACP-134 2 Z E GE,TE,C L

Goal. Certify knowledge of computed value procedures.

Requirement. Define the products listed, the parameters required for computation and verbally state the computation procedures:

(1) Pressure altitude.
(2) Density altitude.
(3) Altimeter.
(4) Wet Bulb Globe Temperature Index.
(5) Wind Chill Temperature.
(6) Fahrenheit to Celsius.
(7) Relative Humidity.
(8) Knots to Miles per hour.
(9) Dew point.

Performance Standard. List the parameters required for computations and state the computation procedures without error.

Prerequisite. Marine Corps Weather Observer Course.

ACP-135 1 Z E GE,TE,C L

Goal. Certify proficiency at calculating pressure altitude.

Requirement. Utilizing available equipment and in accordance with references, calculate pressure altitudes.

Performance Standard. Accurately calculate pressure altitude 20 times in accordance with the references.

Prerequisite. Marine Corps Weather Observer Course.

ACP-136 1 Z E GE,TE,C L

Goal. Certify proficiency at calculating density altitude.

Requirement. Utilizing available equipment and in accordance with references, calculate density altitudes.

Performance Standard. Accurately calculate density altitude 20 times in accordance with the references.

Prerequisite. Marine Corps Weather Observer Course.

ACP-137 1 Z E GE,TE,C L

Goal. Certify proficiency at calculating wet bulb globe temperature index (WBGTI).

Requirement. Given a WBGTI set, correctly read, calculate and annotate the WBGTI. Perform the following:

(1) Take Readings from:
  (a) Dry bulb thermometer.
  (b) Wet bulb thermometer.
  (c) Black bulb thermometer.
(2) Enter readings on locally prepared forms.
(3) Apply standard calculations to readings.
(4) Compare sum of corrected readings to index table.

Performance Standard. Processes and computes values 10 times, values must be within .1 degree Fahrenheit.

Prerequisite. Marine Corps Weather Observer Course.

ACP-138 1 Z E GE,TE,N L

Goal. Certify proficiency electronic WBGTI equipment operations.

Requirement. Given a WBGTI set, correctly operate sensing device to obtain values for use in WBGTI computations. Perform the following:

(1) Power on system.
(2) Select appropriate scales.
(3) Ensure system is configured as per references.
(4) Ensure sensing device is maintained per the references.
(5) Conduct operator preventative maintenance.

Performance Standard. Complete the requirement accurately 10 times. Computed values shall be verified by the MAI for accuracy.

Prerequisite. Marine Corps Weather Observer Course.

ACP-139 .5 Z E GE,TE,C L

Goal. Certify proficiency at calculating wind chill temperature.

Requirement. Given appropriate software, manual devices, or tables, calculate the wind chill temperature. Perform the following:

(1) Take Readings from:
  (a) Dry bulb thermometer.
  (b) Wet bulb thermometer.
(2) Obtain wind speed.
(3) Calculate wind chill temperatures.

Performance Standard. Complete the requirement accurately 10 times. Computed values shall be verified by the MAI for accuracy.

Prerequisite. Marine Corps Weather Observer Course.

ACP-140 1 Z E GE,TE L

Goal. Certify proficiency at lightning detection equipment operations.

Requirement. Given a lightning detection system, conduct power up and down procedures, reset range alarms, determine azimuth and distance of lightning from the area of interest, and manipulation of display. Perform the following:

(1) Power on system.
(2) Log on to the system.
(3) Establish communications.
(4) Turn on/off directed alarm ranges.
(5) Manipulate display to support mission.
(6) Configure and archive data.

Performance Standard. Complete requirement until all steps are completed without error.

Prerequisite. Marine Corps Weather Observer Course.

ACP-141 1 Z E GE,TE L

Goal. Certify knowledge of basic meteorological radar operations.

Requirement. Given meteorological radar and applicable manuals, complete the basic operations listed while maintaining both operator and equipment safety:

(1) Perform power up/power down procedures.
(2) Perform log on/log off functions.
(3) Identify proper connectivity.
(4) Disable alarms and identify threshold exceeded.
(5) Retrieve and display radar products.

Performance Standard. Complete requirement until all steps are completed without error.

Prerequisite. Marine Corps Weather Observer Course.

ACP-142 3 Z E GE,TE L

Goal. Certify proficiency knowledge of Doppler radar products.

Requirement. State the base and derived products of the Doppler radar.

(1) Base Reflectivity.
(2) Base Velocity.
(3) Storm relative products.
(4) Echo tops.
(5) Max tops.
(6) VAD.
(7) VIL.
(8) TVS.

Performance Standard. Complete requirement until all steps are completed without error.

Prerequisite. Marine Corps Weather Observer Course.

ACP-143	1	Z	E	GE,TE,C	L

Goal. Certify knowledge of the upper air messages and the Skew-T Log P.

Requirement. State how to decode upper atmospheric soundings and exhibit an understanding of the scales and features of a Skew-T Log P diagram.

(1) Decode the upper atmospheric sounding in accordance with the references.
(2) Identify the scales and use of scales located on the Skew T Log-P diagram.

Performance Standard. Tested, verbally or written, on decoding upper atmospheric soundings and the components of the Skew-T Log P diagram.

Prerequisite. Marine Corps Weather Observer Course.

ACP-144	1	Z,R	E	GE,TE,C	L

Goal. Certify proficiency at plotting and analyzing a Skew-T Log-P diagram.

Requirement. Utilizing a blank Skew-t diagram and/or appropriate software and upper air sounding, plot and analyze upper-air data. Perform the following:

(1) Obtain Upper Air Observation Data.
(2) Plot mandatory levels, significant levels, and significant wind data.
(3) Analyze for the following:
    (a) CCL.
    (b) LCL.
    (c) LFC.
    (d) PEA.
    (e) NEA.
    (f) SSI.
    (g) T1.
    (h) T2.
    (i) Forecasted maximum temperature.
    (j) Forecasted minimum temperature.
    (k) Freezing level.
    (l) Contrails.
    (m) Tropopause.

Performance Standard. Within 30 minutes, the Basic METOC Marine will plot and analyze a Skew-T Log P diagram in accordance with the Master solution.

Prerequisite. Marine Corps Weather Observer Course.

ACP-145	.25	Z	E	GE,TE,C	L

Goal. Certify proficiency at plotting warnings/advisories.

Requirement. Given the warning or advisory data and the appropriate chart or software, plot the warning data. Perform the following:

(1) Select the scale.
(2) Plot the warning.
(3) Check plots for accuracy.

Performance Standard. Within 15 minutes, plot warning or advisory without error.

Prerequisite. Marine Corps Weather Observer Course.

ACP-146	1	Z	E	GE,TE,C	L

Goal. Certify proficiency at plotting a local area work chart (LAWC).

Requirement. Plot the local area work chart with all available data using the appropriate chart or software.

Performance Standard. Complete the standard within 100% accuracy.

Prerequisite. Marine Corps Weather Observer Course.

External Syllabus Support. Alphanumeric METOC data.

ACP-147	.5	Z	E	GE,TE,C	L

Goal. Certify knowledge of ceiling balloon operations.

Requirement. Read and comprehends the procedures for determining ceiling heights utilizing ceiling balloons. State the procedures for determining ceiling height utilizing ceiling balloons.

Performance Standard. Tested, verbally or written. Must complete without error.

Prerequisite. Marine Corps Weather Observer Course.

ACP-148	.5	Z	E	GE,TE,C	L

Goal. Certify knowledge of pilot balloon (PIBAL) procedures and equipment.

Requirement. Identify the equipment, state the equipment purpose, and the procedures for conducting PIBAL observations. Visually identify and state the use of the following equipment:

(1) Theodollite.
(2) Plotting board or appropriate software.
(3) Appropriate balloon based on sky condition.
(4) Required weight sets.
(5) Appropriate conversion tables.

Performance Standard. Identify the equipment, state the equipment purpose, and state the procedures for conducting PIBAL observations during a written or oral test with 80% accuracy.

Prerequisite. Marine Corps Weather Observer Course.

ACP-149	5	Z	E	GE,TE,C	L

Goal. Certify proficiency at PIBAL observations.

Requirement. Utilizing a theodollite, the appropriate balloon and in accordance with local regulations, track a balloon until no longer visible. Complete the following:

(1) Determine size and color of balloon.
(2) Assemble, level and orient the theodolite.
(3) Launch balloon.
(4) Annotate entries every 60 seconds on form.
(5) Using current software enter elevation and azimuth entries. (Manual devices may be substituted if available)
(6) Retrieve, encode and disseminate.

Performance Standard. In accordance with the references, accurately track a pibal and compute (manually or computer aided) flight level wind speed and direction a minimum of 5 times.

Prerequisite. Marine Corps Weather Observer Course.

ACP-150	.25	Z	E	GE,TE,C	L

Goal. Certify proficiency at pilot reports (PIREPs) procedures.

Requirement. Given a PIREP and appropriate forms, correctly encode and disseminate the PIREP within 10 minutes of receipt. Perform the following:

(1) Receive PIREP via available communication device.
(2) Annotate the TEI's on the correct form.
(3) Disseminate the PIREP.

Performance Standard. Must meet the requirement a minimum of 10 times IAW the references.

Prerequisite. Marine Corps Weather Observer Course.

ACP-151	1	Z	E	C	L

Goal. Certify knowledge of METOC reports.

Requirement. Identify the following locally prepared reports and discuss the content thereof:

(1) Earthquake Report.
(2) Tsunami Report.
(3) Pilot Report.
(4) Volcano Report.
(5) Station Information Report.

Performance Standard. Tested, verbally or written, 100 % proficiency required.

Prerequisite. Marine Corps Weather Observer Course.

ACP-152 1 Z E C L

Goal. Certify proficiency at calculating astronomical data.

Requirement. Utilizing available equipment, software, and in accordance with references, calculate solar and lunar data for 5 specified locations.

Performance Standard. Must accurately calculate solar and lunar data in accordance with the references.

Prerequisite. Marine Corps Weather Observer Course.

ACP-153 1 Z E C L

Goal. Certify proficiency at calculating tidal data.

Requirement. Utilizing available equipment, software, and in accordance with references, calculate tidal data for 5 specified locations.

Performance Standard. Must accurately calculate tidal data in accordance with the references.

Prerequisite. Marine Corps Weather Observer Course.

4. Apprentice METOC Operations (AMO)

a. Purpose. To enhance and develop proficiency in initial assession training through practical application in real-time, controlled operations.

b. General

(1) Administrative Notes. Events in this portion will be completed at the initial Fleet METOC unit upon graduation of the Marine Corps Weather Observer Course.

(2) Prerequisites. Eligible for Secret clearance.

(3) Crew Requirements. Qualified Apprentice METOC Analyst and MAI.

c. Academic Training

(1) Academic training for each event in this phase shall be conducted by a MAI and has been designated by the appropriate authority.

(2) Event academic prerequisite must be completed prior to the commencement of the event. No waivers for academic prerequisites will be acceptable to ensure comprehensive knowledge of the subject.

d. Event Training

AMO-155	180	Z,R	E	GE,TE	L

Goal. Conduct weather watch functions.

Requirement. In accordance with locally established procedures and references, conduct the following watch functions:

(1) Ensure all duties are fully completed.
(2) Conduct security procedures.
(3) Mentor subordinates on watch functions.
(4) Identify logistic requirements.
(5) Conduct quality assurance procedures.
(6) Monitor data ingest of METOC information.
(7) Identify observational special criteria relevant to locally produced forecast products and locally produced warnings.
(8) Identify and correct Apprentice METOC Analyst training deficiencies.
(9) Ensure the timely and accurate dissemination of locally produced METOC data and products.
(10) Ensure the timely and accurate dissemination of locally produced warnings/advisories.

Performance Standard. Conduct the requirement under the supervision of a designated Lead METOC apprentice for a period of 1 month prior to conducting the watches on own.

Prerequisite. Marine Corps Weather Observer Course, ACP events.

132. COMBAT READY TRAINING

1. Advanced Familiarization Training (AFM)

a. Purpose. To introduce the Apprentice METOC Analyst to core plus skills and competencies.

b. General. Documentation of training events shall be completed and reported in ATRIMS as well as local training jackets. Personnel must have the Apprentice METOC Analyst qualification (QAL 609) prior to assignment to this stage of training.

c. Requirement. A MAI shall conduct training. The MAI shall locally document and forward documentation of events to the Master METOC Analyst for approval of completion.

d. Event Training

AFM-200	.5	Z	E	GE,TE,N	L/S

Goal. Introduce the elements and terminology utilized in conducting surf observations.

Requirement. Define the elements and terminology required to conduct a surf observation.

(1) Appropriate observation point.
(2) Significant breaker height.
(3) Maximum breaker height.
(4) Wave period.
(5) Breaker types.
(6) Littoral current.
(7) Surf zone.

Performance Standard. Verbally or written tested, must achieve 80% accuracy.

Prerequisite. Academic training by MAI on subject.

AFM-201	.5	Z	E	M	L/S

Goal. Introduction to upper air observational equipment and procedures.

Requirement. Identify components, state use of the components and procedures required for taking an upper air observation.

(1) Identify the following components:
    (a) UMQ 12.
    (b) UMQ 12 antenna.
    (c) Radiosonde.
    (d) Required weight sets.
(2) State the use of the following components:
    (a) UMQ 12.
    (b) UMQ 12 antenna.
    (c) Radiosonde.
    (d) Required weight sets.
(3) Read and comprehend the procedures for conducting upper air observations contained in the references.

Performance Standard. Verbally or written tested, must achieve 80% accuracy.

Prerequisite. Academic training by MAI on subject.

AFM-202	5	Z	E	M,N	L/S

Goal. Introduce subsystems inherent to the METMF(R).

Requirement. Visually identify each component of the subsystems within the METMF(R) and briefly discuss the capabilities of each.

(1) Shelter Subsystem (SSS).
    (a) Shelter.
    (b) ECU.
    (c) Door mounted safety equipment.
    (d) Power distribution unit.
(2) Processing Subsystem (PCS).
    (a) WINNT domain.
    (b) UNIX Operating systems.
    (c) Connectivity Devices/ Cryptological devices.
(3) Meteorological Radar System (MRS).
    (a) Nomenclature.
    (b) Max Range.

(c) Frequency and Power.
(d) Software.
(e) Basic Outputs.
(4) Meteorological Satellite Subsystem (MSS).
(a) Nomenclature.
(b) Frequencies.
(c) Encryption.
(d) Antenna array.
(e) Receiver.
(f) Software
(g) Basic Outputs.
(5) Communications Subsystem (CSS).
(a) Nomenclature.
(b) Connectivity/ Cryptological devices.
(c) Antenna Arrays.
(6) Portable Meteorological Subsystem (PMS).
(a) Nomenclature.
(b) Connectivity.
(c) Receivers.
(7) Local Sensor Subsystem (LSS).
(a) Nomenclature.
(b) Software.
(c) Operating Ranges.
(8) Remote Sensor Subsystem (RSS).
(a) Nomenclature.
(b) Software.
(c) Operating Ranges.
(d) Connectivity.
(9) Rawinsonde subsystem (RWS).
(a) Nomenclature.
(b) Connectivity.
(c) Frequencies.
(d) Antenna arrays.
(10) Video Subsystem (VSS).
(a) Nomenclature.
(b) Connectivity.

Performance Standard. Without error, visual identify each component of the subsystems within the METMF(R) and briefly discuss the capabilities of each.

Prerequisite. Academic training by MAI on subject.

AFM-203	4	Z	E	GE,M,N	L/S

Goal. Introduce locally generated forecast products.

Requirement. Identify the products listed and discuss the content of the product:

(1) Terminal Aerodrome forecasts.
(2) Search and rescue forecasts.
(3) Local Area forecasts.
(4) Synoptic scale forecasts.
(5) Mesoscale forecasts.
(6) Severe Weather forecasts.
(7) Drop Zone forecasts.

(8) Sound propagation forecasts.

Performance Standard. Discuss content and sources used for each forecast product listed above without error.

Prerequisite. Academic training by MAI on subject.

AFM-204 10 Z E C L/S

Goal. Introduce locally generated reports and messages.

Requirement. Gain familiarity with the reports listed below through academic training and mentorship:

(1) Casualty reports (CASREP).
(2) General administrative message (GENADMIN).
(3) Joint Operational Area Forecast (JOAF).
(4) Basic Wind Message (BWM).
(5) Weather Observation message.
(6) Route Weather Forecast (WEAX).
(7) Tactical Atmospheric Summary (TAS).
(8) Strike Forecast (STRKFCST).
(9) Severe Weather (SVRWX).
(10) Assault Forecast (ASLTFCST).
(11) Amphibious Objective Area Forecast (AOAFCST).
(12) Chemical Downwind Message (CDM).
(13) Weather warning (WW).

Performance Standard. State the content of the listed messages/reports with 80% accuracy.

Prerequisite. Academic training by MAI on subject.

AFM-205 20 Z E GE,M,N L/S

Goal. Introduce graphical METOC products.

Requirement. Gain familiarity with the graphical METOC products listed below through academic training and mentorship:

(1) Horizontal Weather Depiction.
(2) Satellite imagery.
(3) Radar imagery.
(4) Surface chart.
(5) Upper Air Charts.
(6) Oceanographic Charts.
(7) Local Area Work Charts.
(8) Tropical Weather Charts.
(9) Vorticity Charts.
(10) Thickness Charts.

Performance Standard. Identify features and uses of the charts listed in the requirements to the satisfaction of the MAI.

Prerequisite. Academic training by MAI on subject.

AFM-206	4	Z	E	GE,M,N	L/S

Goal. Introduce flight weather products.

Requirement. Gain familiarity with the content and orders governing the preparation and use of the following flight weather products:

(1) DD 175-1 flight weather briefing.
(2) Flight Weather Folder.
(3) Squadron Briefings.
(4) Aviation Strike Brief.
(5) Convective Sigmets/Airmets.
(6) Non-Convective Sigmets/Airmets.

Performance Standard. Identify and locate reference sources governing each product listed without error.

Prerequisite. Academic training by MAI on subject.

AFM-207	6	Z	E	GE,M,N	L/S

Goal. Introduce oceanographic/littoral warfare products.

Requirement. Gain familiarity with the content and orders/directives governing the preparation and use of the following oceanographic/littoral warfare products:

(1) Sea Surface Temperature Charts.
(2) Current and Tidal Carts.
(3) Modified Surf Index.
(4) Beach Survey Charts.
(5) STOIC
(6) SAIL
(7) Riverine Survey Charts.

Performance Standard. Identify and locate reference sources governing each product listed without error.

Prerequisite. Academic training by MAI on subject.

AFM-208	12	Z	E	GE,M,N	L/S

Goal. Introduce tactical decision aid (TDA) products.

Requirement. Gain familiarity with TDA products listed below through academic training and mentorship:

(1) Electro-Optical TDA.
(2) Electro-Magnetic TDA.
(3) Space Weather TDA.
(4) Impact charts.
(5) Sound propagation.
(6) Hazard Prediction Assessment.

Performance Standard. Apprentice METOC Analyst shall discuss what information is contained in the listed products, requirements to obtain product, and the customer for each product, without error.

Prerequisite. Academic training by MAI on subject.

AFM-209	2	Z	E	C	L/S

Goal. Introduce elements forecasted from a Skew-T Log P.

Requirement. Discuss and define elements that can be forecasted from the Skew-T Log P diagram:

(1) Thunderstorm probability.
(2) Max/ Min Temps.
(3) Turbulence.
(4) Icing.
(5) Hail size.
(6) Convective Gusts.
(7) Fog Dissipation.
(8) Contrails.
(9) Cloud types and coverage.
(10) Precipitation.

Performance Standard. Complete the requirement to the satisfaction of the MAI.

Prerequisite. Academic training by MAI on subject.

AFM-210	2	Z	E	GE,M,N	L/S

Goal. Introduce criteria and procedures for issuing weather warnings and advisories.

Requirement

(1) Define the criteria for setting weather warnings and advisories.
(2) State the processes for issuing weather warnings or advisories.

Performance Standard. Complete the requirement to the satisfaction of the MAI.

Prerequisite. Academic training by MAI on subject.

2. APPRENTICE METOC OPERATIONS (AMO)

a. Purpose. To enhance proficiency in core skills and core plus skills through practical application.

b. General. This portion of the training syllabus is comprised of On-Job and event driven training. Documentation of training events shall be completed and reported in ATRIMS as well as local training jackets.

c. Requirement. A METOC Analyst Instructor shall conduct training. The METOC Analyst Instructor shall locally document and forward documentation of events to the Master METOC Analyst.

d. Event Training

AMO-211	8	R	E	M,N	L/S

Goal. Develop proficiency at establishing tactical observational operations.

Requirement. Establish the point of observation, sensor array, and configure software organic to the meteorological mobile facility to observe weather elements. In accordance with the references, complete the following tasks:

(1) Establish observational point.
(2) Set up sensor array(s).
(3) Configure software for ingest.
(4) Archive observational data.
(5) Conduct operator level troubleshooting.

Performance Standard. Without supervision and in accordance with the references. The Marine must complete the requirement a minimum of 3 times for successful completion of the event.

Prerequisite. Academic training by MAI on subject.

AMO-212	50	Z	E	M,N	L/S

Goal. Develop proficiency at utilizing automated tactical sensing equipment.

Requirement. Utilizing automated tactical sensing equipment, conduct observational operations. Conduct the listed tasks:

(1) Determine and record type of observation.
(2) Record time of observation.
(3) Verify and record wind direction, speed, character, and significant wind events.
(4) Evaluate, verify and record visibility.
    (a) Types and direction of obscuring phenomena.
    (b) Types and intensity of weather.
(5) Determine and record sky condition.
    (a) Cloud type.
    (b) Cloud height.
    (c) Cloud direction and movement.
    (d) Cloud amount.
(6) Read and record dry bulb and dew point temperatures.
(7) Read and record current altimeter setting.
(8) Encode and record applicable remarks.
(9) Read and record station pressure.
(10) Read and record sea level pressure.
(11) Proof read recorded elements.
(12) Initial observation, confirming accuracy of report.
(13) Record summary of the day.

Performance Standard. In accordance with the references, evaluate and record the listed elements 200 times with an accuracy rate of 97.0%: wind, temperature pressure, visibility, current weather, and sky condition. 50% of the total observations must take place in a nighttime environment.

Prerequisite. Academic training by MAI on subject.

AMO-213	1.5	Z,R	E	N/A	L/S

Goal. Develop proficiency at conducting surf observations.

Requirement. Utilize appropriate timing device and temperature sensing equipment to observe and annotate a surf observation. Perform the following:

(1) Determine point of observations.
(2) Determine and annotate:
    (a) Significant breaker height.
    (b) Maximum breaker height.
    (c) Period.
    (d) Breaker types.
    (e) Angle of breaker relative to beach.
    (f) Littoral current.
    (g) Surf zone.
    (h) Additional remarks.

Performance Standard. Complete the requirement 3 times in accordance with the appropriate references.

Prerequisite. Academic training by MAI on subject.

AMO-214	1.5	Z	E	M,N	L/S

Goal. Develop proficiency at Meteorological Mobile Facility Replacement {METMF(R)} power operations.

Requirement. Conduct power up and power down procedures within the METMF(R). In accordance with the reference, conduct graceful shutdown and reboot of each system within the mobile meteorological facility.

Performance Standard. Without supervision and in accordance with the reference, complete the requirement without corruption of METOC data or operating systems.

Prerequisite. Academic training by MAI on subject.

AMO-215	16	Z	E	M,N	L/S

Goal. Develop proficiency at METMF(R) embarkation/debarkation.

Requirement. Complete the listed tasks in accordance with the references and security procedures:

(1) Pack up of the MetMF(R) and subsystems.
(2) Pack up of ancillary equipment items.
(3) 30-day inventory.

(4) Load the MetMF(R).
(5) Unpack the MetMF at the designated area.
(6) Set up the MetMF Configuration.
(7) Conduct calibration and functional checks.

Performance Standard. Without supervision and in accordance with the reference complete the requirement.

Prerequisite. Academic training by MAI on subject.

External Syllabus Support. Heavy Equipment Support.

AMO-216	6	Z,R	E	M	L/S

Goal. Develop proficiency at upper atmosphere observations operations.

Requirement. Utilizing the AN/UMQ-12, appropriate balloon, and mini-rawinsonde, successfully receive and process data from the surface to 100 mb.

(1) Energize AN/UMQ-12.
(2) Prepare balloon and sonde.
(3) Enter the surface observation and coefficients.
(4) Tune radiosonde.
(5) Compare readings with current surface observation.
(6) Ensure adequate satellite synchronization.
(7) Obtain clearance and launch sounding.
(8) Post process sounding.
(9) Save data to appropriate location.
(10) Encode and disseminate alphanumeric data as appropriate.

Performance Standard. Complete the requirement IAW with the references a minimum of 3 times.

Prerequisite. Academic training by MAI on subject.

AMO-217	1	Z	E	GE,M,N	L/S

Goal. Generate astronomical, tidal, and climatological data.

Requirement. Given mission parameters and appropriate software or forms, generate astronomical, tidal, and climatological data for the 5 locations.

Performance Standard. The MAI shall determine the locations 300 nautical miles apart. The MAI shall evaluate the produced product for content and format prior to awarding completion credit.

Prerequisite. Academic training by MAI on subject.

AMO-218	1	Z	E	GE,M,N	L/S

Goal. Compute Modified Surf Index (MSI).

Requirement. Given mission parameters, forecasted parameters and appropriate software or forms, generate MSI for 3 separate locations.

Performance Standard. The MAI shall determine the locations and provide forecast data. The MAI shall evaluate MSI for format and content IAW the references prior to awarding completion credit.

Prerequisite. Academic training by MAI on subject.

AMO-219	5	Z	E	GE,M,N	L/S

Goal. Generate Optimum Path Aircraft Routing System (OPARS) products.

Requirement. Given mission parameters and appropriate software or forms, generate OPARS support products for five routes of flight.

Performance Standard. The MAI shall provide the mission parameters. The MAI shall evaluate OPARS products for format and content IAW the references prior to awarding completion credit.

Prerequisite. Academic training by MAI on subject.

AMO-220	4	Z	E	GE,M,N	L/S

Goal. Generate meteorological and oceanographic charts.

Requirement. Utilizing METOC equipment and software, retrieve and/or generate METOC charts in support of forecast process. The MAI shall state the products to be generated.

Performance Standard. The MAI shall provide the forecast to be generated and the required products. The MAI shall evaluate generated products for format and content IAW the references prior to awarding completion credit.

Prerequisite. Academic training by MAI on subject.

AMO-221	1	Z	E	N/A	L/S

Goal. Demonstrate knowledge of security procedures.

Requirement. Define, discuss and identify security terms/designations in accordance with current references.

(1) Clearances.
(2) Access.
(3) Compromise Procedures.
(4) Need-to-know.
(5) Physical security.
(6) NATO Classifications.
(7) Classifying authority.
(8) Ensure Completion of Security Checks.

Performance Standard. Without error complete the requirement during verbal or written testing.

Prerequisite. Academic training by MAI on subject.

AMO-222 2 Z E M L/S

Goal. Display operating knowledge of tactical satellite system(s).

Requirement. Given a tactical satellite system, applicable operating manuals, and understanding the limitations and capabilities of satellite imagery acquisition and enhancements, display a working knowledge of satellite system operations.

(1) Conduct power up/power down procedures.
(2) Conduct log on/log off functions.
(3) Schedule receipt of imagery.
(4) Update of Ephemeris Data.
(5) Ensure product path for received products is correct.
(6) Ensure naming conventions are adhered to.
(7) Ensure signal decryption values are set for reception of scheduled passes.
(8) Archive imagery for retrieval at a later time.

Performance Standard. Without error complete the requirement during verbal or written testing.

Prerequisite. Academic training by MAI on subject.

AMO-223 8 Z E M L/S

Goal. Display operating knowledge of tactical Doppler radar system(s).

Requirement. Given a tactical radar meteorological system, applicable operating manuals display a working knowledge of Radar operations. Complete the following tasks:

(1) Conduct power up/power down procedures.
(2) Conduct log on/log off functions.
(3) Discuss the core Doppler radar products and the products derived from them.
(4) Display desired Doppler radar products.

Performance Standard. Completion of the requirement without violating system integrity, configuration or communications.

Prerequisite. Academic training by MAI on subject.

AMO-224 2 Z E M,N L/S

Goal. Conduct limited METOC operations utilizing man-portable METOC components (NITES IV).

Requirement. Utilizing the NITES IV, complete the following tasks:

(1) Unpack components.
(2) Connect peripherals.
(3) Establish observational sensing.
(4) Establish workgroup or network connectivity.
(5) Conduct satellite operations.
(6) Conduct graphic product retrieval.
(7) Conduct alphanumeric data retrieval.

Performance Standard. The Apprentice METOC Analyst shall complete the requirement IAW the references without assistance.

Prerequisite. Academic training by MAI on subject.

AMO-225	3	Z	E	GE	L/S

Goal. Operate the garrison Doppler radar system.

Requirement. Given a Principle User's Processor and Systems Console and in accordance with the reference(s), operate the applicable Doppler Radar. Discuss and operate the following:

(1) System peripherals.
(2) Monitor system performance.
(3) Archive data.
(4) Ability to retrieve and display data.

Performance Standard. Without aid of reference complete the requirement.

Prerequisite. Academic training by MAI on subject.

AMO-226	1	Z	E	GE,M,N	L/S

Goal. Install a wet bulb globe temperature index set.

Requirement. Establish a WBGTI sensor site IAW the references. Complete the following tasks IAW the reference(s):

(1) Install mounting stand.
(2) Install components on stand.
(3) Verify installation is correct.
(4) Perform maintenance as required.

Performance Standard. The WBGTI setup shall be completed with aid of reference. Evaluation of sensor setup shall be conducted by the MAI.

Prerequisite. Academic training by MAI on subject.

AMO-227	10	Z	E	GE,M,N	L/S

Goal. Perform basic surface chart analysis.

Requirement. Given a surface chart with regional plots, complete (re)analyzation for the listed features without violating data:

(1) Isobars.
(2) High and Low pressure centers.
(3) Frontal boundaries.

Performance Standard. Complete the analysis 10 times. After each analysis, the MAI shall conduct a professional discussion with the apprentice to refine analytical techniques.

Prerequisite. Academic training by MAI on subject.

AMO-228	10	Z	E	GE,M,N	L/S

Goal. Perform basic thickness chart analysis.

Requirement. Given a thickness chart, complete an analysis of the chart for the listed features without violating data or rules:

(1) Warm and cold air advection.
(2) High and low pressure centers.
(3) Troughs and ridges.

Performance Standard. Complete the analysis 10 times. After each analysis, the MAI shall conduct a professional discussion with the apprentice to refine analytical techniques.

Prerequisite. Academic training by MAI on subject.

AMO-229	50	Z	E	GE,M,N	L/S

Goal. Perform basic upper atmospheric chart analysis.

Requirement. Given a chart set, complete an analysis of the chart for the listed features without violating data or rules:

(1) Isoheights.
(2) Isotherms.
(3) Areas of significant moisture.
(4) Major short wave axis, troughs and ridges.
(5) Minor short wave axis, troughs and ridges.
(6) High and Low height centers.

Performance Standard. Complete the analysis 10 times. After each analysis, the MAI shall conduct a professional discussion with the apprentice to refine analytical techniques.

Prerequisite. Academic training by MAI on subject.

AMO-230	5	Z	E	GE,M,N	L/S

Goal. Perform basic satellite imagery analysis.

Requirement. Given a satellite image, complete an analysis of the satellite image for the listed features without violating data or rules:

(1) Jet stream axis.
(2) Basic cloud types and formations.
(3) Land/terrain features.
(4) Significant weather phenomena.

Performance Standard. Complete the analysis 10 times. After each analysis, the MAI shall conduct a professional discussion with the apprentice to refine analytical techniques.

Prerequisite. Academic training by MAI on subject.

AMO-231	5	Z	E	GE,M,N	L/S

Goal. Perform basic radar imagery analysis.

Requirement. Given a radar image, complete an analysis of the radar image for the listed features without violating data or rules:

(1) Base reflectivity products.
  (a) Thunderstorm features.
  (b) Outflow boundaries.
(2) Base velocity products.
  (a) Outflow patterns.
  (b) Regions of shear.
(3) Base spectrum width products.

Performance Standard. Complete the analysis 10 times. After each analysis, the MAI shall conduct a professional discussion with the apprentice to refine analytical techniques.

Prerequisite. Academic training by MAI on subject.

AMO-232	15	Z	E	GE,M,N	L/S

Goal. Generate tactical decision aids required in support of operations.

Requirement. Given mission parameters and forecasted data, produce basic tactical decision aid products used by the JMA in impact assessment. The listed products shall be produced at a minimum:

(1) Historical environmental prediction condition (HEPC) summary.
(2) Refractive index profile.
(3) Radar coverage diagrams.
(4) Radar propagation loss.
(5) Platform vulnerability.
(6) Probability of detection.
(7) Electronic support measures.
(8) Electronic countermeasures.
(9) AREPS.
(10) SLAP.
(11) TAWS.

Performance Standard. METOC Analyst Instructor shall evaluate successful completion of the all the requirements per references.

Prerequisite. Academic training by MAI on subject.

133. COMBAT QUALIFICATION TRAINING

1. Apprentice METOC Operations (AMO)

a. Purpose. To enhance proficiency in core skills and core plus skills through practical application.

b. General. This portion of the training syllabus is comprised of on-job and event driven training. Documentation of training events shall be completed and reported in ATRIMS as well as local training jackets.

c. Requirement. A METOC Analyst Instructor shall conduct training. The METOC Analyst Instructor shall locally document and forward documentation of events to the Master METOC Analyst.

d. Event Training

AMO-300	4	Z	E	GE,M,N	L/S

Goal. Conduct a watch turnover procedures.

Requirement. When directed, conduct watch turnover procedures. The Apprentice METOC Analyst shall complete the listed tasks:

(1) Brief current weather conditions.
(2) Brief equipment status.
(3) Brief current watches, warnings and advisories.
(4) Brief personnel status.

Performance Standard. The MAI will evaluate the Apprentice METOC Analyst on the performance of the requirement for successful completion of the event. Requirement shall be fulfilled 10 times.

Prerequisite. Academic training by MAI on subject.

AMO-301	4	Z	E	C	L/S

Goal. Conduct logistic support functions.

Requirement. Conduct the listed logistical support functions IAW references:

(1) Inventory consumables and identify deficiencies to the METOC chief.
(2) Initiate request for supplies and equipment.
(3) Execute hazardous materials program procedures.
(4) Execute deployment of METOC equipment when directed.

Performance Standard. The MAI will evaluate the performance of the requirement for successful completion IAW the references.

Prerequisite. Academic training by MAI on subject.

AMO-302	2	Z	E	C	L/S

Goal. Conduct a forward area limited observation program (FALOP) procedures.

Requirement. Given a request for information (RFI), respond with requested support products. Complete the following:

(1) Encode observational data requested.
(2) Record observational date requested.
(3) Disseminate observational data requested.

Performance Standard. The MAI will evaluate the performance of the requirement for successful completion IAW the references.

Prerequisite. Academic training by MAI on subject.

AMO-303	1	Z	E	GE,M,N	L/S

Goal. Maintain meteorological data in central server database.

Requirement. Utilizing meteorological processing systems, network applications, and in accordance with system technical manuals, perform the following:

(1) Archive locally derived products to METOC database.
(2) Archive METOC message traffic into METOC database.
(3) Archive locally derived mission support briefs into METOC database.
(4) Monitor incoming data streams into the METOC database.
(5) Disseminate products from the METOC database as required.

Performance Standard. The MAI shall evaluate the completion of the requirement to ensure that the Apprentice METOC Analyst does not violate system or data integrity.

Prerequisite. Academic training by MAI on subject.

AMO-304	24	Z	E	GE,M,N	L/S

Goal. Operate HF/VHF/UHF/SHF radio receivers/transceivers.

Requirement. Utilize HF/VHF/UHF/SHF radio receivers/transceivers and in accordance with system technical manuals. Perform the following:

(1) Select a frequency.
(2) Tune for optimum reception.
(3) Monitor output.
(4) Patch to appropriate output device.
(5) Fill SINCGARS.
(6) Operate receivers/transmitters in clear and covered mode.
(7) Operate in a single channel and frequency-hopping mode.

Performance Standard. The MAI shall evaluate the Apprentice METOC Analyst’s performance of the requirement to ensure that procedures are in accordance with the references and do not violate system or data integrity.

Prerequisite. Academic training by MAI on subject.

AMO-305	2	Z	E	N/A	L/S

Goal. Perform security procedures.

Requirement. Perform METOC operations IAW security procedures without violation of security orders and regulations. Perform the following:

(1) Enforce physical security awareness program.
(2) Load communication security (COMSEC) equipment.
(3) Prevent compromise of classified material.
(4) Exercise emergency action/destructive plans.
(5) Maintain security logbook.

Performance Standard. The MAI shall evaluate the Apprentice METOC Analyst's performance of the requirement to ensure that procedures are in accordance with the references and do not violate security procedures.

Prerequisite. Academic training by MAI on subject.

AMO-306	24	Z	E	GE,M	L/S

Goal. Perform advanced operations on meteorological radar.

Requirement. Given meteorological radar and applicable manuals complete advanced operations while maintaining both operator and equipment safety. Perform the listed tasks:

(1) Select Product type for generation.
(2) Transfer radar product type to database.
(3) Perform:
    (a) Archive product functions.
    (b) Zoom functions.
    (c) Loop functions.
    (d) 3-d display functions.
    (e) Range height indicator (RHI) applications.
    (f) Color scale adjustments for product display.
    (g) Cross-section functions.
(4) Setup and implement job scheduling of radar products.

Performance Standard. The MAI shall evaluate the Apprentice METOC Analyst's performance of the requirement to ensure that procedures are in accordance with the references. Professional discussion of the actions and uses of the imagery retrieved shall be conducted by the MAI to enhance understanding.

Prerequisite. Academic training by MAI on subject.

AMO-307	7	Z	E	GE,M	L/S

Goal. Perform advanced operations on available satellite system.

Requirement. Utilizing the available equipment and manuals, perform the listed tasks:

(1) Transfer satellite imagery product to database.
(2) Perform archive product function.
(3) Perform zoom functions.
(4) Execute loop functions.
(5) Execute pre-established product set enhancement curves.
(6) Perform color scale adjustments for product display.

Performance Standard. The MAI shall evaluate the Apprentice METOC Analyst's performance of the requirement to ensure that procedures are in accordance with the references. Professional discussion of the processes and uses of the imagery retrieved shall be conducted by the MAI to enhance understanding.

Prerequisite. Academic training by MAI on subject.

AMO-308	2	Z	E	GE,M,N	L/S

Goal. Identify meteorological features on satellite imagery.

Requirement. Utilizing current satellite imagery, correctly identify basic meteorological features in accordance with the reference:

(1) Areas of high pressure.
(2) Areas low pressure.
(3) Frontal boundaries.
(4) Thunderstorms.
(5) Significant cloud elements.
(6) Jet streams.

Performance Standard. The MAI shall evaluate the Apprentice METOC Analyst's performance of the requirement to ensure that procedures are in accordance with the references. Professional discussion of the identification of the features and uses of the analyzed features shall be conducted by the MAI to enhance understanding.

Prerequisite. Academic training by MAI on subject.

AMO-309	2	Z	E	GE,M,N	L/S

Goal. Identify meteorological features on meteorological radar products.

Requirement. Utilizing current meteorological radar products, correctly identify basic meteorological features in accordance with the reference:

(1) Cloud tops.
(2) Cloud and precipitation.
(3) Maximum wind.
(4) Severe weather events.

Performance Standard. The MAI shall evaluate the Apprentice METOC Analyst's performance of the requirement to ensure that procedures are in accordance with the references. Professional discussion of the identification of the features and uses of the analyzed features shall be conducted by the MAI to enhance understanding.

Prerequisite. Academic training by MAI on subject.

2. Forecast Support Training (FST)

a. Purpose. To familiarize and train personnel in forecast support roles.

b. General

(1) Administrative Notes. Training shall be completed locally by a qualified MAI. Close oversight of this stage of training by the METOC chief is essential to ensure a solid base of knowledge for progression within the METOC community.

(1) Prerequisites

(a) Minimum of 3 years in operational apprentice METOC billet.

(b) Rank of Lance Corporal to Sergeant.

(c) Recommended by a qualified journeyman and assignment to syllabus by the METOC Officer.

(d) Completion of events 600, 602, 603, 604.

(3) Stage End Performance. Upon completion of this stage of the syllabus the Apprentice METOC Analyst shall have a base knowledge and techniques for providing limited forecast support.

c. Crew Requirements. Qualified Apprentice METOC Analyst, METOC Analyst Instructor, and Qualified Journeyman Analyst.

d. Academic Training. Academic training is required for successful completion of this stage of the syllabus. Units are encouraged to utilize all training materials, text, computer based, on-job, and simulations to solidify knowledge of the events listed.

e. Event Training

FST-310	5	Z	E	GE,M,N	L/S

Goal. Introduce the core knowledge of atmospheric physics.

Requirement. Exhibit knowledge of the following subjects:

(1) Atmospheric structure.
(2) Atmospheric Variables.
(3) Vectors.
(4) Pressure.
(5) Temperature and moisture.
(6) Fundamentals of atmospheric concepts.
(7) Advection.
(8) Thermal winds.
(9) Thickness charts.
(10) Heat transfer.
(11) Cloud formation and dissipation.
(12) Precipitation types

Performance Standard. The Apprentice METOC Analyst shall be able to identify and technically discuss the subjects listed on a written or verbal test and achieve a proficiency of 80% or higher. MAI shall determine completion of the event based on confidence exhibited by the apprentice when answering questions and achievement of proficiency on the test.

Prerequisite. Academic training by MAI on subject.

FST-311	5	Z	E	GE,M,N	L/S

Goal. Demonstrate the core knowledge of atmospheric dynamics.

Requirement. Exhibit knowledge of the following subjects:

(1) Rotational and circular motion.

(2) Atmospheric forces.
(3) Divergence.
(4) Vorticity.
(5) Jet streams.
(6) Atmospheric wave terminology.
(7) 500 mb heights and vorticity chart.
(8) Vertical motions.
(9) Air masses.
(10) Frontal systems.
(11) Evolution of frontal systems.
(12) Synoptic scale systems.
(13) Evolution of synoptic scale baroclinic systems.
(14) Local modification to large scale circulations.

Performance Standard. The Apprentice METOC Analyst shall be able to identify and technically discuss the subjects listed on a written or verbal test and achieve a proficiency of 80% or higher. MAI shall determine completion of the event based on confidence exhibited by the apprentice when answering questions and achievement of proficiency on the test.

Prerequisite. Academic training by MAI on subject.

FST-312 2 Z E N/A L/S

Goal. State the advantages and disadvantages, and analysis of meteorological satellite imagery.

Requirement. Exhibit knowledge of the following subjects:

(1) Advantages and disadvantages.
(2) Principles of weather satellite imagery.
(3) Weather Satellite types.
(4) Weather Satellite imagery and enhancements.
(5) Weather Satellite derived products.
(6) Weather Satellite viewing considerations.
(7) Weather Satellite analysis.

Performance Standard. The Apprentice METOC Analyst shall be able to identify and technically discuss the subjects listed on a written or verbal test and achieve a proficiency of 80% or higher. MAI shall determine completion of the event based on confidence exhibited by the apprentice when answering questions and achievement of proficiency on the test.

Prerequisite. Academic training by MAI on subject.

FST-313 6 Z E N/A L/S

Goal. Introduce theories of atmospheric dynamics and physics application through synoptic scale analysis.

Requirement. Exhibit knowledge of theoretical dynamics and physics by initializing, analyzing, briefing meteorological features and providing sound meteorological reasoning for placement of features. The Apprentice METOC Analyst shall:

(1) Initialize model data.
(2) Analyze or re-analyze:
    (a) Surface chart.
    (b) Thickness chart.
    (c) Vorticity.
    (d) Standard Upper Air chart set.
    (e) Satellite imagery.
    (f) Radar imagery.
    (g) Weather depiction charts.
(3) Discuss meteorological reasoning for analyzed features.

Performance Standard. The Apprentice METOC Analyst shall be able to identify, depict and provide technical reasoning for meteorological features depicted. Apprentice METOC Analyst shall complete the requirement without violating meteorological rules.

Prerequisite. Academic training by MAI on subject.

FST-314	10	Z	E	N/A	L/S

Goal. Introduce synoptic scale forecasting and prognosis techniques.

Requirement. Analyze centrally prepared products and applying academic principles, forecast synoptic scale features by completing the listed items:

(1) Initial model data.
(2) Analyze or re-analyze:
    (a) Surface chart.
    (b) Thickness chart.
    (c) Vorticity.
    (d) Standard Upper Air chart set.
    (e) Satellite imagery.
    (f) Radar imagery.
    (g) Weather depiction charts.
(3) Develop forecasted intensity and location of weather features.
(4) Discuss meteorological reasoning for forecasted elements.

Performance Standard. The Apprentice METOC Analyst shall be able to identify, depict and provide technical reasoning for meteorological features depicted. Apprentice METOC Analyst shall complete the requirement without violating meteorological rules.

Prerequisite. Academic training by MAI on subject.

FST-315	2	Z	E	N/A	L/S

Goal. Global and regional METOC model data.

Requirement

(1) Identify the model type.
(2) State the strengths and weakness for each type of model runs.

Performance Standard. Without error.

Prerequisite. Academic training by MAI on subject.

FST-316	24	Z	E	N/A	L/S

Goal. Introduce weather element forecasting (Mesoscale analysis and forecasting) techniques.

Requirement. Upon completion of academic training, exhibit a comprehensive knowledge of Mesoscale forecasting by analyzing, forecasting, and briefing Mesoscale meteorological features.

Performance Standard. Must successfully pass written measurement and complete the requirement without violating meteorological theories.

Prerequisite. Academic training by MAI on subject.

FST-317	6	Z	E	N/A	L/S

Goal. To introduce techniques and procedures for forecasting convective and non-convective severe weather.

Requirement. Given required charts, shall forecast the convective and non-convective severe weather elements listed and provide meteorological justification for forecast:

(1) Vertical and horizontal wind shear gradients.
(2) Tornadic activity.
(3) Thunderstorm activity.
(4) Winter Storms.

Performance Standard. Given METOC data, knowledge of atmospheric physics and dynamics, and in accordance with the references, forecast for the specified severe weather elements.

Prerequisite. Academic training by MAI on subject.

FST-318	2	Z	E	N/A	L/S

Goal. Introduce aviation weather forecasting techniques and procedures.

Requirement. Receive training on aviation weather forecasting, generation of aviation weather products, and briefing products. At a minimum, analyze and forecast for:

(1) Turbulence.
(2) Icing.
(3) Take off weather.
(4) Upper level weather elements.
(5) Arrival weather elements.

Performance Standard. Given academic training, METOC data, mission data, and in accordance with the references, forecast for specified forecast aviation weather elements and provide aviation weather support products within course tolerances.

Prerequisite. Academic training by MAI on subject.

FST-319	1	Z	E	N/A	L/S

Goal. Introduce weather warnings and advisories.

Requirement. Become familiar with weather warnings and advisories, the content of each, and the forecasting techniques to determine the required warning and/or advisory.

Performance Standard. Upon completion of academic training, student shall take a written exam. Minimum score 80%.

Prerequisite. Academic training by MAI on subject.

FST-320	10	Z	E	N/A	L/S

Goal. Brief chart set.

Requirement. Utilizing Analyzed Chart set, brief 5 chart sets. Each chart set shall contain, at a minimum, the charts listed. Brief meteorological features that have been analyzed:

(1) Surface chart.
(2) Upper air charts:
    (a) 850.
    (b) 700.
    (c) 500.
    (d) 300.
(3) Support charts:
    (a) Satellite Imagery.
    (b) Vorticity.
    (c) 1000-500MB Thickness.

Performance Standard. The MAI shall evaluate the Apprentice METOC Analyst’s performance of the requirement to ensure that procedures are in accordance with the references. Professional discussion of the identification of the features and uses of the analyzed features shall be conducted by the MAI to enhance understanding.

Prerequisite. Academic training by MAI on subject.

FST-321	3	Z	E	N/A	L/S

Goal. To certify knowledge of local area forecasting content and format.

Requirement. In accordance with the references, utilize local, regional, and global meteorological models to assess and determine the current and forecast meteorological elements. Prepare a local area forecast for a 96 hour period. At a minimum complete the following tasks:

(1) Forecast cloud types and amount.
(2) Forecast precipitation types and probability.
(3) Forecast surface visibility.
(4) Forecast weather and obstruction to visibility.
(5) Forecast Maximum/Minimum temperatures.
(6) Forecast wind Speed, Direction, and character.
(7) Forecast icing type, height, and intensity.
(8) Forecast turbulence type, height, and intensity.

Performance Standard. MAI will evaluate the product for content and verification.

Prerequisite. Academic training by MAI on subject.

FST-322 25 Z,R E GE,M,N L/S

Goal. To certify knowledge of Terminal Aerodrome Forecast (TAF) content and format.

Requirement. In accordance with the references and utilizing local, regional, and global meteorological models, assess the determine current and forecast meteorological elements and prepare a Terminal Aerodrome Forecast. At a minimum, complete the following tasks:

(1) Minimum altimeter setting.
(2) Cloud types, amounts, and layer heights.
(3) Precipitation types.
(4) Surface visibility.
(5) Weather and obstruction to visibility.
(6) Maximum/Minimum temperatures.
(7) Wind Speed, Direction, and character.
(8) Icing type, height, and intensity.
(9) Turbulence type, height, and intensity.
(10) Encode forecast meteorological elements in accordance with reference.

Performance Standard. MAI will ensure 50% of the TAFS are for a location other than their current location. Must complete the requirement a minimum of 25 times and be in accordance with references.

Prerequisite. Academic training by MAI on subject.

FST-323 8 Z E GE,M,N L/S

Goal. Conduct flight weather briefing (DD175-1).

Requirement. Under the supervision of a MAI and when given a DD175 or like flight weather request, graphic METOC products, alphanumeric meteorological products, appropriate software and hardware, and knowledge of forecasting rules and theories, prepare a minimum of 20 flight weather briefings and 5 VFR Stamp flight weather briefings. For each brief the Apprentice METOC Analyst will complete the following steps:

(1) Evaluate current atmospheric parameters along the flight path.
(2) Forecast the following atmospheric impacts along the flight path.
    (a) Turbulence.
    (b) Icing.
    (c) Thunderstorm Activity.
    (d) Flight visibility.
    (e) Flight level Winds and temperature.
(3) Forecast the following meteorological conditions at destinations and alternates.
    (a) Sky Conditions.
    (b) Visibility.

(c) Type and character of Precipitation or obstruction to visibility.
(d) Wind Direction.
(e) Wind Speed (within 5 knots of actual conditions).
(f) Altimeter Setting.

Performance Standard. Requirement must be met within 10 minutes of receipt and be in accordance with orders and directives. Specific criteria for content are:

(1) Sky Conditions (within 500 feet of actual arrival conditions).
(2) Visibility (within 1 mile of the actual arrival conditions).
(3) Type and character of Precipitation or obstruction to visibility.
(4) Wind Direction (within 30 degrees if wind speed greater than six knots of actual arrival conditions).
(5) Wind Speed (within 5 knots of actual conditions).
(6) Altimeter Setting (within 2 in. of mercury of actual arrival conditions).

Prerequisite. Academic training by MAI on subject.

FST-324	10	Z	E	GE,M,N	L/S

Goal. To certify knowledge of flight weather packets.

Requirement. Given a flight weather packet request, prepare and brief a flight weather packet. Flight weather packet shall include the following products:

(1) Construct a horizontal weather depiction.
(2) Construct a ditch-heading chart.
(3) Construct an altimeter setting chart.
(4) Construct an upper-level wind chart.
(5) Construct a sea surface temperature chart.
(6) Prepare DD-175-1 flight weather brief.
(7) Prepare an OPNAV 3140/25 flight forecast folder.
(8) Include mission essential products as applicable.

Performance Standard. Flight weather packet must be in accordance with the references, be completed within 2 hours, and be accomplished a minimum of 5 times.

Prerequisite. Academic training by MAI on subject.

FST-325	12	Z	E	N/A	L/S

Goal. Draft and conduct a climatology brief.

Requirement. Research, prepare, and conduct a 3 month climatology brief, which includes the listed items as determined by the MAI:

(1) Overview.
(2) Geography.
(3) Terrain.
(4) Oceanography.
(5) Astronomical.

(6) Seismic activity.
(7) Specific weather elements, if applicable:
(a) Relative humidity.
(b) Temperature.
(c) Thunderstorms/precipitation.
(d) Prevailing winds.
(e) Sky condition.
(f) IFR/VFR/Marginal VFR percentages.
(g) Ice thickness and flow.
(h) Volcanic activity.

Performance Standard. Completed brief must contain the items determined by the MAI and be representative of the climate in the selected area. The MAI shall determine the area of interest, location and content of the brief.

Prerequisite. Academic training by MAI on subject.

134. FULL COMBAT QUALIFIED

1. Apprentice METOC operations

a. Purpose. To extend the proficiency in core skills and core plus skills to special METOC operations that require completion by a limited number of personnel.

b. General. This portion of the training syllabus is comprised of on-job and event driven training. Documentation of training events shall be completed and reported in ATRIMS as well as local training jackets.

c. Requirement. A METOC Analyst Instructor shall conduct training. The METOC Analyst Instructor shall locally document and forward documentation of events to the Master METOC Analyst.

d. Event Training

AMO-400	1	Z	E	N/A	L/S

Goal. Conduct tower visibility observer training.

Requirement. Conduct tower visibility observer certification training. Upon completion, prepare and disseminate correspondence to the certifying authority for approval.

Performance Standard. Train Air Traffic Control personnel on observing visibility.

Prerequisite. Academic training by MAI on subject.

AMO-401	2	Z	E	M,N	L/S

Goal. Intermediate networking.

Requirement. Given data and a METOC data network, be able to discuss standard network components and activity with non-resident technicians during troubleshooting processes. The Apprentice METOC Analyst must also

be able to draft outage reports. The Apprentice METOC Analyst will identify, discuss, or conduct the following:

(1) Components of a basic network.
(2) Purpose of basic network components.
(3) General network commands.
(4) Preparation of draft outage messages.
(5) Identify possible system/software upgrades.
(6) Follow flow charts for troubleshooting systems.

Performance Standard. Must discuss subject without reference.

Prerequisite. Academic training by MAI on subject.

AMO-402	2	Z	E	C	L/S

Goal. When assigned as the logs corrector, perform quality assurance checks on observational, climatological, tidal, and station reports.

Requirement. Given each type of report(s), the individual will conduct quality assurance checks. The Apprentice METOC Analyst will ensure reports are correct for:

(1) Content.
(2) Format.
(3) Coding.
(4) Timeliness.

Performance Standard. The designated Logs Corrector shall conduct quality assurance checks to 100% accuracy.

Prerequisite. Academic training by MAI on subject.

AMO-403	3	Z,R	E	M,C	L/S

Goal. When assigned as assistant embarkation representative, implement established embarkation procedures for the METMF(R) in the absence of the embarkation (S)NCO.

Requirement. Utilizing the established embarkation procedures contained in the embarkation desktop procedures, Apprentice METOC Analyst will conduct embarkation operations for the METMF(R) and identify deficiencies in the procedures to the Embarkation (S)NCO. The Apprentice METOC Analyst will perform the following:

(1) A quarterly review of the embarkation plan.
(2) Identify deficiencies in procedures.
(3) Identify deficiencies in the load plans.
(4) Proper marking of all embarkation containers.
(5) Attend all embarkation meetings.

Performance Standard. Plans must be in accordance with the references.

Prerequisite. Academic training by MAI on subject.

AMO-404 2 Z E GE,M,N L/S

Goal. Maintain meteorological data in central server database.

Requirement. Utilizing meteorological processing systems and network applications, perform METOC database functions. The Apprentice METOC Analyst will perform the following:

(1) Perform basic setup functions.
(2) Perform diagnostic check through configuration menus.
(3) Perform functionality checks between network meteorological systems.
(4) Maintain shortcut icons, toolbars and hot buttons.
(5) Save meteorological product sets to a local database.
(6) Using transmission control protocol (TCP) Internet protocols (TCP/IP), disseminate individual product sets to central processor.

Performance Standard. Conduct the requirement IAW with local policies, procedures and applicable references to ensure database functionality.

Prerequisite. Academic training by MAI on subject.

AMO-405 3 Z E GE,M,N L/S

Goal. Generate a METOC capabilities briefing.

Requirement. Given mission parameters and appropriate software or forms, the Apprentice METOC Analyst shall generate a METOC capabilities brief.

Performance Standard. Utilizing the mission parameters and appropriate software or forms, the Apprentice METOC Analyst will complete a METOC capabilities brief, in accordance with the references, that shall be evaluated by a MAI or JMA for content and format.

Prerequisite. Academic training by MAI on subject.

2. Forecast Support Certification (FSC)

a. Purpose. To certify the Qualified Apprentice METOC Analyst’s knowledge required for Forecast Support Qualification.

b. General

(1) Administrative Notes. This stage of the syllabus reinforces the knowledge introduced to the Apprentice during initial assession training and introduce more in-depth and comprehensive training event toward applying the knowledge learned. Appendix D provides a checklist for qualification in Forecast Support.

(2) Prerequisites

(a) Minimum of 3 years in an operational apprentice METOC billet.

(b) Rank of Lance Corporal to Sergeant.

(c) Recommended by a qualified journeyman and assignment to syllabus by the METOC Officer.

(d) Completion of events 600, 602, 603, 604.

(3) Refresher Training. Refresher events shall be completed annually, as per Subject Matter Qualification, or when assigned.

c. Crew Requirements. Qualified JMA, METOC Analyst Instructor, Apprentice METOC Analyst.

d. Academic Training. Computer Based Training (CBT) courses, locally derived periods of instruction, and mentorship greatly enhance the training events in this stage. Local METOC units are encouraged to utilize all training mediums and materials to ensure comprehensive understanding of the topics contained within the events.

e. Event Training

FSC-406	10	Z	E	N/A	L/S

Goal. To certify knowledge of atmospheric fundamentals.

Requirement. Verbally define and discuss the atmospheric fundamentals listed below during a technical discussion with qualified MAI, Master METOC Analysts and/or METOC Chief:

(1) Long/short wave trough/ridges.
  (a) Deepening/building/intensifying.
  (b) Filling/weakening.
  (c) Cyclogenesis/frontogenesis.
  (d) Cyclolysis/frontolysis.
(2) Pressure systems.
  (a) Baroclinic/barotropic.
  (b) Warm/cold air advection.
  (c) Dry/moist air advection.
(3) Frontal systems.
  (a) Active/inactive cold fronts.
  (b) Active/inactive warm fronts.
  (c) Stationary fronts.
  (d) Warm/Cold occlusions.
  (e) Type “A”/”B” occlusions.
(4) Jet features.
  (a) Polar front jet stream.
  (b) Subtropical jet stream.
  (c) Conduction/radiation/advection/convection.
(5) Vorticity.
(6) Thickness.
(7) Condensation/evaporation/sublimation.
(8) Convergence/confluence.
(9) Divergence/diffluence.
(10) Types of baroclinic/barotropic low-pressure systems.
(11) Types of baroclinic/barotropic high-pressure systems.
(12) Gradient wind.
(13) Geostrophic wind.
(14) Relative/absolute/specific humidity.
(15) Pressure gradient.

(16) Cloud identification/formation.

Performance Standard. The Apprentice METOC Analyst shall discuss 10 topics assigned by the MAI from the topics listed in the requirement and respond to questions posed.

Prerequisite. FST-310 through FST-320 inclusive.

FSC-407 6 Z E N/A L/S

Goal. To certify knowledge of analyzing and interpreting upper atmospheric weather charts.

Requirement. Given reference materials, analyze and interpret the 925/850/700/500/300/250/200 mb constant pressure charts for the features listed, without violating data and analyzation rules, within 6 hours, to exhibit application of upper atmospheric dynamics and physics:

(1) Isoheights.
(2) Isotherms.
(3) Areas of significant moisture.
(4) Major short wave axis, troughs and ridges.
(5) Minor short wave axis, troughs and ridges.
(6) High and Low height centers.
(7) Warm and cold pockets.
(8) Upper fronts (where applicable).

Performance Standard. Upon completion of analysis, the Apprentice METOC Analyst will be required to discuss meteorological reasoning for placement of features until confidence in knowledge is achieved.

Prerequisite. FST-310 through FST-320 inclusive.

FSC-408 .75 Z E N/A L/S

Goal. To certify knowledge of analyzing and interpreting a surface chart.

Requirement. When given a surface chart, apply analytical techniques and depict the features listed. Discuss meteorological reasoning for placement of features:

(1) Isobars.
(2) High and Low pressure centers.
(3) Fronts.
(4) Highlight weather symbols.
(5) Troughs.
(6) Label air masses.
(7) Dry lines.
(8) Isallobars.
(9) Isodrosotherms.
(10) Identify outflow boundaries.

Performance Standards. Complete the requirement within 45 minutes and without violating meteorological theories. Discuss meteorological reasoning for placement of features.

Prerequisite. FST-310 through FST-320 inclusive.

FSC-409 .5 Z E N/A L/S

Goal. To certify knowledge of analyzing and interpreting a thickness chart.

Requirement. Given a thickness chart, shall apply analytical techniques and depict the features listed. Discuss meteorological reasoning for placement of features:

(1) Warm/cold air advection.
(2) High and Low pressure centers.
(3) Fronts.
(4) 540Dam Line
(5) Troughs.
(6) Label air masses.
(7) Jet stream.

Performance Standards. Complete the requirement within 30 minutes and without violating meteorological theories. Discuss meteorological reasoning for placement of features.

Prerequisite. FST-310 through FST-320 inclusive.

FSC-410 .5 Z E N/A L/S

Goal. To certify knowledge of analyzing and interpreting a vorticity chart.

Requirement. When given a vorticity chart, apply analytical techniques and depict the features listed. Discuss meteorological reasoning for placement of features:

(1) Positive/negative vorticity areas.
(2) Shear lobes.
(3) Advection lobes.
(4) Vorticity lobes.
(5) X-N distribution.
(6) Jet stream
(7) UVM/DVM

Performance Standards. Complete the requirement within 30 minutes and without violating meteorological theories. Discuss meteorological reasoning for placement of features.

Prerequisite. FST-310 through FST-320 inclusive.

FSC-411 1 Z E N/A L/S

Goal. To certify knowledge of conducting streamline analysis.

Requirement. When given a wind chart, conduct a streamline analysis denoting the features listed. Discuss meteorological reasoning for placement of features:

(1) Streamlines.
(2) Asymptotes (convergent/divergent).

(3) Neutral points.
(4) Label cyclonic and anti-cyclonic centers.
(5) Isotachs.
(6) Wind maximums and minimums.

Performance Standards. Complete the requirement within 1 hour and without violating meteorological theories.

Prerequisite. FST-310 through FST-320 inclusive.

FSC-412 1 Z E N/A L/S

Goal. To certify knowledge of analyzing and forecasting atmospheric conditions from the Skew-T Log P Diagram.

Requirement. Analyze a Skew-T Log P diagram for elements listed. Discuss how the analyzed elements are applicable to current and forecasted weather phenomenon:

(1) Compute indices.
    (a) Lifted index.
    (b) KI index.
    (c) Sweat index.
    (d) Showalter's index.
    (e) Total Totals.
(2) Analyze negative/positive energy areas.
(3) Analyze for equilibrium levels.
(4) Compute turbulent areas.
(5) Compute tops of convective activity.
(6) Compute contrails.
(7) Compute icing types and levels.
(8) Compute maximum and minimum temperatures.
(9) Compute hail.
(10) Compute thunderstorm gusts.
(11) Analyze freezing level.
(12) Analyze for areas of moisture.
(13) Compute D-Values.
(14) Compute Relative humidity.

Performance Standard. Must analyze a Skew-T Log P diagram for the elements listed above and state how the derived values/elements apply to forecasting. Evaluation can be written, verbal or practical application.

Prerequisite. AFM-209.

FSC-413 6 Z E N/A L/S

Goal. To certify knowledge of applied meteorological reasoning in the forecasting of movement and intensity of synoptic scale features.

Requirement. When given required charts, forecast intensity and movement of features listed in the performance steps and provide meteorological justification for forecast:

(1) Forecast movement and intensity changes in major short wave troughs/ridges.

(2) Forecast movement and intensity in upper level high and low pressure system.
(3) Forecast isotherms in major short wave features.
(4) Forecast moisture in major short wave features.
(5) Forecast movement and intensity in minor short waves.
(6) Forecast cyclogenesis of baroclinic low-pressure systems.
(7) Forecast cycloysis of baroclinic low-pressure systems.
(8) Forecast anticyclogenesis of baroclinic high-pressure systems.
(9) Forecast anticyclolysis of baroclinic high-pressure systems.
(10) Forecast movement and intensity changes in surface pressure systems.
(11) Forecast movement and intensity changes in surface frontal systems.
(12) Forecast synoptic scale precipitation.
(13) Forecast long wave patterns.
(14) Forecast movement of jet maxes.

Performance Standard. When given required charts and evaluated by a qualified METOC instructor, forecast intensity and movement of features listed in the requirement and provide meteorological justification for the derived forecast.

Prerequisite. FST-310 through FST-320 inclusive.

FSC-414 4 Z E N/A L/S

Goal. To certify knowledge of forecasting severe weather.

Requirement. When given required charts, analyze and forecast for severe weather elements listed and provide meteorological reasoning for each:

(1) Vertical and horizontal wind shear gradients.
(2) Severe Icing.
(3) Severe/Extreme Turbulence.
(4) Tornadic activity.
(5) Thunderstorm activity.
(6) Winter Storms.

Performance Standard. Derived forecast and reasoning must be in accordance with references. Live evaluation shall be conducted under the direct supervision of a qualified METOC instructor. Forecast shall be completed in such a manner to allow for earliest warning of all destructive weather phenomena.

Prerequisite. FST-310 through FST-320 inclusive.

FSC-415 3 Z E N/A L/S

Goal. To certify briefing of METOC features from (re)analyzed products.

Requirement. Utilizing Appendix E, analyze and brief (formally or informally) atmospheric dynamic fundamentals.

Performance Standard. Training and preparation of briefing shall be conducted under the mentoring of the METOC instructor. Brief shall be presented to Qualified Journeyman and Master METOC analysts prior to

qualification events. The Apprentice METOC Analyst must meet the requirement in a period of 3 hours.

Prerequisite. FST-310 through FST-320 inclusive.

FSC-416	25	Z,R	E	N/A	L/S

Goal. To certify knowledge TAF content and format.

Requirement. In accordance with the references and utilizing local, regional, and global meteorological models, assess the determine current and forecast meteorological elements and prepare a Terminal Aerodrome Forecast. At a minimum, complete the following tasks:

(1) Minimum altimeter setting.
(2) Cloud types, amounts, and layer heights.
(3) Precipitation types.
(4) Surface visibility.
(5) Weather and obstruction to visibility.
(6) Maximum/Minimum temperatures.
(7) Wind Speed, Direction, and character.
(8) Icing type, height, and intensity.
(9) Turbulence type, height, and intensity.
(10) Encode forecast meteorological elements in accordance with reference.

Performance Standard. MAI will ensure 50% of the TAFS are for a location other than their current location. Complete the requirement a minimum of 25 times and be in accordance with references.

Prerequisite. FST-310 through FST-322 inclusive.

FSC-417	24	Z	E	N/A	L/S

Goal. To certify knowledge of weather warnings.

Requirement. In accordance with references and local procedures, assess and forecast conditions phenomenon requiring generation of the listed weather warnings. Generate (live or simulated) each warning 5 times:

(1) Thunderstorm warnings.
(2) Severe Thunderstorm warnings/watches.
(3) Tornado warnings/watches.
(4) Wind warnings.
(5) Storm warning.
(6) Gale warning.
(7) Flood warning.
(8) Flash flood warning.
(9) Freeze/Hard Freeze warning.
(10) Small craft warnings/advisories.

Performance Standard. Generate the warnings listed (either simulated or live) in accordance with the references. Live completion of the event shall be monitored and supervised by the METOC instructor to ensure accuracy and safety.

Prerequisite. FST-310 through FST-319 inclusive.

FSC-418	25	Z	E	N/A	L/S

Goal. To certify knowledge of flight weather briefing.

Requirement. When given a DD175 or like flight weather request, graphic METOC products, alphanumeric meteorological products, appropriate software and hardware, and knowledge of forecasting rules and theories, prepare a minimum of 20 flight weather briefings and 5 VFR Stamp flight weather briefings. For each brief the Apprentice METOC Analyst will complete the following steps:

(1) Evaluate current atmospheric parameters along the flight path.
(2) Forecast the following atmospheric impacts along the flight path.
    (a) Turbulence.
    (b) Icing.
    (c) Thunderstorm Activity.
    (d) Flight visibility.
    (e) Flight level Winds and temperature.
(3) Forecast the following meteorological conditions at destination(s) and alternate(s).
    (a) Turbulence.
    (b) Icing.
    (c) Thunderstorm Activity.
    (d) Flight visibility.
    (e) Flight level Winds and temperature.
(4) Forecast the following meteorological conditions at destination(s) and alternate(s).
    (a) Sky Conditions.
    (b) Visibility.
    (c) Type and character of Precipitation or obstruction to visibility.
    (d) Wind Direction.
    (e) Wind Speed (within 5 knots of actual conditions).
    (f) Altimeter Setting.

Performance Standard. Requirement must be met within 10 minutes of receipt and be in accordance with orders and directives. Specific criteria for content are:

(1) Sky Conditions (within 500 feet of actual arrival conditions).
(2) Visibility (within 1 mile of the actual arrival conditions).
(3) Type and character of Precipitation or obstruction to visibility.
(4) Wind Direction (within 30 degrees if wind speed greater than six knots of actual arrival conditions).
(5) Wind Speed (within 5 knots of actual conditions).
(6) Altimeter Setting (within 2 in. of mercury of actual arrival conditions).

Prerequisite. FST-310 through FST-323 inclusive.

FSC-419 10 Z E N/A L/S

Goal. To certify knowledge of flight weather packets.

Requirement. Given a flight weather packet request, prepare and brief a flight weather packet. Flight weather packet shall include the following products:

(1) Construct a horizontal weather depiction.
(2) Construct a ditch-heading chart.
(3) Construct an altimeter setting chart.
(4) Construct an upper-level wind chart.
(5) Construct a sea surface temperature chart.
(6) Prepare DD-175-1 flight weather brief.
(7) Prepare an OPNAV 3140/25 flight forecast folder.
(8) Include mission essential products as applicable.

Performance Standard. Flight weather packet must be in accordance with the references, be completed within 2 hours, and be accomplished a minimum of 5 times.

Prerequisite. FST-310 through FST-324 inclusive.

FSC-420 2 Z E N/A L/S

Goal. To certify knowledge of verifying meteorological model output.

Requirement. Through practical application, verify meteorological model output by identifying strengths and weaknesses of global, regional, and mesoscale numerical models.

Performance Standard. Through practical application, verify model output with 12/24/36/48 analyses. Demonstrate knowledge of available numerical models

Prerequisite. FST-310 through FST-315 inclusive.

3. Forecast Support Operations (FSO)

a. Purpose. This stage of the enhance and re-enforce the knowledge of forecast support after certification and qualification.

b. General

(1) Administrative Notes. Training shall be completed locally by a qualified MAI. Close oversight of this stage of training by the METOC chief is essential to ensure a solid base of knowledge for progression within the METOC community.

(2) Prerequisites

(a) Completion of FST events.
(b) Completion of FSO level 600 events.
(c) Rank of Lance Corporal to Sergeant.

(3) Stage End Performance. Upon completion of this stage of the syllabus the Apprentice METOC Analyst shall have a base knowledge and techniques for providing limited forecast support.

c. Crew Requirements. Qualified Apprentice METOC Analyst, METOC Analyst Instructor, and Qualified Journeyman Analyst.

d. Academic Training. Academic training is required for successful completion of this stage of the syllabus. Units are encouraged to utilize all training materials, text, computer based, on-job, and simulations to solidify knowledge of the events listed.

e. Event Training

FSO-421	60	Z	E	GE,M,N	L/S

Goal. Conduct forecast support operations.

Requirement. Conduct forecast support operations for garrison activities. Personnel assigned may:

(1) Conduct flight weather briefings.
(2) Generate aviation weather products. (TAF, Daily Forecast, route forecasts, etc.)
(3) Conduct security operations.
(4) Conduct warning and advisories functions.
(5) Conduct METOC system operations.
(6) Conduct basic METOC system and network functions.

Performance Standard. Qualified FSO personnel shall conduct operations under the supervision of a qualified JMA to enhance knowledge and assist in non routine scenarios.

Prerequisite. QAL-611.

FSO-422	1	Z	E	N/A	L/S

Goal. Receive recommendation for attendance to MOAF course.

Requirement. Recommendation must be received for attendance to MOAF.

Performance Standard. A Lead METOC Apprentice must possess the technical and professional knowledge as well as exhibit sound leadership and be nominated for assignment to the MOAF Course.

Prerequisite. QAL 611, recommended 6 months OJT as QAL-611.

150. REQUIREMENTS, DESIGNATIONS, AND QUALIFICATION

1. Requirements

a. General. This portion of the training syllabus is comprised of requirements for progression within the occupational specialty 6821. Documentation of training events shall be completed and reported in ATRIMS as well as local training jackets.

b. Combat Readiness Percentage. Completion of the events in this stage do not have combat readiness percentages attached.

c. Event Training

SEC-600 E L

Goal. Tracking code for secret clearance.

Requirement. To ensure secret security clearance is obtained and maintained by the Marine.

Performance Standard. The Marine will complete and submit periodic reviews as required by the references.

Prerequisite. ACP-120, ACP-121.

SEC-601 E L

Goal. Tracking code for top secret clearance.

Requirement. To ensure secret security clearance is obtained and maintained by the Marine.

Performance Standard. The Marine will complete and submit periodic reviews as required by the references.

Prerequisite. SEC-600.

ACA-602 E L

Goal. Enroll and complete online the AG module 1.

Requirement. The Marine will perform the following:

(1) Complete the Module utilizing the materials provided.
(2) Log onto the CNET website.
(3) Transfer answers to on-line form.

Performance Standard. Utilizing the reference and a desktop computer achieve the minimum passing score of 80%.

Prerequisite. None.

ACA-603 E L

Goal. Enroll and complete online the AG module 2.

Requirement. The Marine will perform the following:

(1) Complete the Module utilizing the materials provided.
(2) Log onto the CNET website.
(3) Transfer answers to online form.

Performance Standard. Utilizing the reference and a desktop computer achieve the minimum passing score of 80%.

Prerequisite. ACA-602.

ACA-604 E L

Goal. Enroll and complete on line principles of oceanography.

Requirement. The Marine will perform the following:

(1) Complete the course utilizing the materials provided.
(2) Submit the answer sheet to be locally graded.

Performance Standard. Utilizing the reference achieve the minimum passing score of 80%.

Prerequisite. ACA-602, ACA-603.

ACA-605 E L

Goal. Complete AG module 3.

Requirement. The Marine will perform the following:

(1) Complete the Module utilizing the materials provided.
(2) Log onto the CNET website.
(3) Transfer answers to online form.

Performance Standard. Utilizing the reference and a desktop computer achieve the minimum passing score of 80%.

Prerequisite. ACA-602, ACA-603.

ACA-606 E L

Goal. Complete AG module 4.

Requirement. The Marine will perform the following:

(1) Complete the Module utilizing the materials provided.
(2) Log onto the CNET website.
(3) Transfer answers to online form.

Performance Standard. Utilizing the reference and a desktop computer achieve the minimum passing score of 80%.

Prerequisite. ACA-602 through ACA-605 inclusive.

ACA-607 E L

Goal. Complete AG module 5.

Requirement. The Marine will perform the following:

(1) Complete the Module utilizing the materials provided.
(2) Log onto the CNET website or MarineNet.
(3) Transfer answers to online form.

Performance Standard. Utilizing the reference and a desktop computer achieve the minimum passing score of 80%.

Prerequisite. None.

ACA-608 E L

Goal. Complete Introduction To Forecasting (ITF).

Requirement. The Marine will perform the following:

(1) Complete the course utilizing the material provided.
(2) Take and pass locally administered math test.
(3) Take and pass locally administered meteorological test.

Performance Standard. Utilizing the reference achieve a passing score of 80%.

Prerequisite. ACA-602 through ACA-607 inclusive.

2. Qualifications

a. General. Qualifications are based on the competency and proficiency in specific skills as determined by the designating authority. Qualifications do not have CRP values assigned.

b. Requirement. Documentation of training events shall be completed and reported in ATRIMS as well as local training jackets.

c. Event Training

QAL-609 E L/S

Goal. Obtain qualification as an Apprentice METOC Analyst.

Requirement. SNM will be the subject of a certification board comprised of, at a minimum, a Master METOC Analyst, qualified Apprentice METOC Analyst, and METOC officer. The board will determine the knowledge of all level 100 events through practical applications and response to questions. Upon completion of event, SNM will be granted signature authority for observations. Event shall be completed within 90 days of assignment to first operational unit.

Performance Standard. SNM must successfully exhibit comprehensive knowledge of materials contained in events and respond to questions in a clear and concise manner to be recommended for qualification as a Apprentice METOC Analyst.

Prerequisite. Events FAM-100 through AMO-155 inclusive.

QAL-611 E L/S

Goal. Obtain forecast support qualification.

Requirement. SNM will be the subject of a certification board comprised of, at a minimum, a Journeyman METOC Analyst, a Master METOC Analyst, METOC Chief and/or METOC officer. The board will determine the knowledge

of analysis and forecasting techniques through practical applications and response to questions.

Performance Standard. SNM must successfully exhibit comprehensive knowledge of materials contained in events and respond to questions in a clear and concise manner to be recommended for qualification.

Prerequisite. QAL-609; AFM-200 through FSO-420; ACA-604; ACA-607; ACA-608.

3. Designations

a. General. Designations are based on the leadership capabilities as determined by the designating authority. Designations do not have CRP values assigned.

b. Requirement. Documentation of training events shall be completed and reported in ATRIMS as well as local training jackets.

c. Event Training

DES-612	E	L/S

Goal. Obtain lead METOC apprentice.

Requirement. A Lead METOC Apprentice must exhibit the technical knowledge and leadership qualities to be recommended for designation by a Master METOC analyst.

Performance Standard. A Lead METOC Apprentice must possess the technical and professional knowledge as well as exhibit sound leadership and mentor other METOC apprentices.

Prerequisite. SEC-600, ACA-604, ACA-607, ACA-608 and QAL-611.

180. EVENT CRP/HOURS/REFRESH BREAKDOWN. Tables 1-8 through 1-12 at the end of chapter provides a listing of the events, hours and combat readiness percentage for each stage of the syllabus.

Table 1-8.—-Apprentice METOC Analyst Combat Capable Events.

Combat Capable Training Events (Events, Hours, Interval and CRP)					
STAGE	**CODE**	**HRS**	**Interval**	**CRP**	**Notes**
FAM	100	51	N/A	1	Marine Corps Weather Observer Course
FAM	101	48	N/A	1	Marine Corps Weather Observer Course
FAM	102	68	N/A	1	Marine Corps Weather Observer Course
FAM	103	1	N/A	1	Marine Corps Weather Observer Course
EFT	104	1	N/A	1	Air Force Weather Apprentice Course
EFT	105	10	N/A	1	Air Force Weather Apprentice Course
EFT	106	40.5	N/A	1	Air Force Weather Apprentice Course
EFT	107	45	N/A	1	Air Force Weather Apprentice Course
EFT	108	68	N/A	1	Air Force Weather Apprentice Course
EFT	109	12	N/A	1	Air Force Weather Apprentice Course
EFT	110	12	N/A	1	Air Force Weather Apprentice Course
EFT	111	40.5	N/A	1	Air Force Weather Apprentice Course
EFT	112	40.5	N/A	1	Air Force Weather Apprentice Course
EFT	113	13	N/A	1	Air Force Weather Apprentice Course
EFT	114	12	N/A	1	Air Force Weather Apprentice Course
EFT	115	12	N/A	1	Air Force Weather Apprentice Course
ACP	116	1	N/A	1	Air Force Weather Apprentice Course
ACP	117	1	N/A	1	
ACP	118	1	N/A	1	
ACP	119	1	N/A	1	
ACP	120	6	N/A	1	
ACP	121	1	N/A	1	
ACP	122	1	N/A	1	
ACP	123	1	N/A	1	
ACP	124	1	N/A	1	
ACP	125	3	N/A	1	
ACP	126	3	N/A	1	
ACP	127	6	N/A	1	
ACP	128	1	N/A	1	
ACP	129	12	N/A	1	
ACP	130	2	N/A	1	
ACP	131	2	N/A	1	
ACP	132	50	N/A	1	
ACP	133	50	N/A	1	
ACP	134	2	N/A	1	

Table 1-8.—-Apprentice METOC Analyst Combat Capable Events--Continued.

ACP	135	1	N/A	1	
ACP	136	1	N/A	1	
ACP	137	1	N/A	1	
ACP	138	1	N/A	1	
ACP	139	15	N/A	1	
ACP	140	1	N/A	1	
ACP	141	1	N/A	1	
ACP	142	3	N/A	1	
ACP	143	1	N/A	1	
ACP	144	1	N/A	1	
ACP	145	.25	N/A	1	
ACP	146	1.0	N/A	1	
ACP	147	.5	N/A	1	
ACP	148	.5	N/A	1	
ACP	149	5	N/A	1	
ACP	150	.25	N/A	1	
ACP	151	1.0	N/A	1	
ACP	152	1	N/A	1	
ACP	153	1	N/A	1	
AMO	155	155	N/A	6	
TOTALS		811		60	

Table 1-9.—-Apprentice METOC Analyst Combat Ready Events.

Combat Ready Training Events (Events, Hours, Interval and CRP)					
STAGE	**CODE**	**HRS**	**Interval**	**CRP**	**Notes**
AFM	200	.5		.5	
AFM	201	.5		.5	
AFM	202	5		.5	
AFM	203	4		.5	
AFM	204	10		.5	
AFM	205	20		.5	
AFM	206	4		.5	
AFM	207	6		.5	
AFM	208	12		.5	
AFM	209	2		.5	
AFM	210	2		.5	
AMO	211	8	180	.5	
AMO	212	50	180	.5	

Table 1-9.—-Apprentice METOC Analyst Combat Capable Events--Continued.

AMO	213	1.5	365	.5	
AMO	214	1.5	90	.5	
AMO	215	16	365	.5	
AMO	216	6	180	.5	
AMO	217	1	180	.5	
AMO	218	1	365	.5	
AMO	219	5	180	.5	
AMO	220	4	90	.5	
AMO	221	1	365	.5	
AMO	222	2	90	.5	
AMO	223	8	90	.5	
AMO	224	2	180	.5	
AMO	225	3	365	.5	
AMO	226	1		.5	
AMO	227	10	90	.5	
AMO	228	10	90	.5	
AMO	229	50	90	.5	
AMO	230	5	90	.5	
AMO	231	5	90	.5	
AMO	232	15	365	.5	
TOTALS		272		15	

Table 1-10.—-Apprentice METOC Analyst Combat Qualified Events.

Combat Qualified Training Events (Events, Hours, Interval and CRP)					
STAGE	**CODE**	**HRS**	**Interval**	**CRP**	**Notes**
AMO	300	4		.8	
AMO	301	4		.8	
AMO	302	2		.8	
AMO	303	1		.8	
AMO	304	24	180	.8	
AMO	305	2		.8	
AMO	306	24	180	.8	
AMO	307	7	180	.8	
AMO	308	2	90	.8	
AMO	309	2	90	.8	
FST	310	5	180	.8	
FST	311	5	180	.8	
FST	312	2		.8	
FST	313	6	365	.8	

Table 1-10.—-Apprentice METOC Analyst Combat Qualified Events--Continued.

FST	314	10	365	.8	
FST	315	2		.8	
FST	316	24		.8	
FST	317	6		.8	
FST	318	2		.8	
FST	319	1		.8	
FST	320	10	90	.8	
FST	321	3		.8	
FST	322	25		.8	
FST	323	8		.8	
FST	324	10		.8	
FST	325	12		.8	
TOTALS		203		20	

Table 1-11.—-Apprentice METOC Analyst Full Combat Qualified Events.

Full Combat Qualified Training Events (Events, Hours, Interval and CRP)					
STAGE	**CODE**	**HRS**	**Interval**	**CRP**	**Notes**
AMO	400	1		.2	
AMO	401	2		.2	
AMO	402	2		.2	
AMO	403	3		.2	
AMO	404	2		.2	
AMO	405	3		.2	
FSC	406	10	90	.2	
FSC	407	6	90	.2	
FSC	408	1	90	.2	
FSC	409	.5	90	.2	
FSC	410	.5	90	.2	
FSC	411	1	90	.2	
FSC	412	1	90	.2	
FSC	413	6	90	.2	
FSC	414	4	90	.2	
FSC	415	3	90	.2	
FSC	416	25	90	.2	
FSC	417	24	90	.2	
FSC	418	25	90	.2	
FSC	419	10	90	.2	
FSC	420	2	90	.2	
FSO	421	60	90	.2	
FSO	422	1		.2	

Table 1-12.—-Requirements, Qualifications, and Designations Events.

Requirements, Qualification, Designations Events (Events, Hours, Interval and CRP)					
STAGE	**CODE**	**HRS**	**Interval**	**CRP**	**Notes**
SEC	600				
SEC	601				
ACA	602				Requires training completion certificate
ACA	603				Requires training completion certificate
ACA	604				Requires training completion certificate
ACA	605				Requires training completion certificate
ACA	606				Requires training completion certificate
ACA	607				Requires training completion certificate
ACA	608				Requires training completion certificate
QAL	609		180		Require designating authority letter
QAL	611		180		Require designating authority letter
DES	612				Require designating authority letter

190. EVENT CHAINING. Tables 1-13 provides a listing of the events and chained events.

Table 1-13.—Event Chaining Table.

Event	Events Updated
AMO-216	AFM-201
AMO-213	AFM-200
AMO-306	AMO-223
AMO-307	AMO-222
FST-320	AMO-227,AMO-228,AMO-229,AMO-230,AM0-231
FSC-407	AM0-229
FSC-408	AMO-227
FSC-409	AMO-228

CHAPTER 2

JOURNEYMAN AND MASTER METOC ANALYST (MOS 6842)

FIGURES

TABLES

CHAPTER 2

JOURNEYMAN AND MASTER METOC ANALYST (MOS 6842)

200. CORE COMPETENCIES/SKILLS

1. Meteorological and Oceanographic (METOC) Unit Mission. The mission of the Marine Corps METOC unit is to provide meteorological, oceanographic, and space environmental information, products, and services required in support of joint, combined, and Marine Corps operations as directed.

2. Mission Essential Task List (METL)

a. Collect, record, and disseminate METOC parameters in support of joint, combined, and Marine Corps operations.

b. Analyze, evaluate, and forecast METOC parameters in support of joint, combined, and Marine Corps operations.

c. Assess and disseminate METOC impacts to weapons systems in support of joint, combined, and Marine Corps operations.

3. METOC Core Capability

a. Core competent aviation METOC units are capable of:

(1) Supporting continuous (24/7) aviation operations based from a Forward Operating Base (FOB) with remote atmospheric sensing capabilities for up to two Forward Arming and Refueling Points (FARP).

(2) Providing continuous (24/7) environmental support to CONUS and OCONUS garrison Marine Corps Air Stations and Facilities in the form of seamless METOC surface and upper air observations and forecasts out to 96 hours.

(3) Providing timely and accurate weather warnings to local bases and stations for protecting resources.

b. Core competent METOC Support Teams (MST) are capable of:

(1) Providing continuous METOC support to non-aviation elements of the MAGTF during planning, execution, and debrief of all missions.

(2) Providing mission and task organized, rapidly deployable METOC capabilities that enhance the unit commander's ability to exploit the environment and facilitate mission success.

201. BASIC/RESERVE JOURNEYMAN METOC ANALYST PROGRAM OF INSTRUCTION

WEEKS	COURSE/PHASE	ACTIVITY
1-31	MOAF/COMBAT CAPABLE	KEESLER AFB, MS
32-46	FORECASTER CERTIFICATION/COMBAT CAPABLE	LOCAL METOC
47-151	COMBAT READY TRAINING	LOCAL METOC

152-256	COMBAT QUALIFICATION TRAINING	LOCAL METOC
257-WC	FULL COMBAT QUALIFICATION TRAINING	LOCAL METOC

202. PROGRAM OF INSTRUCTION FOR REFRESHER JOURNEYMAN METOC ANALYST TRAINING

WEEKS	COURSE/PHASE	ACTIVITY
1-4	COMBAT CAPABLE/CERT	LOCAL METOC
5-6	COMBAT READY TRAINING	LOCAL METOC
6-7	COMBAT QUALIFICATION TRAINING	LOCAL METOC

203. PROGRAM OF INSTRUCTION FOR FORMAL SCHOOLS INSTRUCTOR

WEEKS	COURSE/PHASE	ACTIVITY
1-5	BASIC INSTRUCTORS COURSE	KEESLER AFB, MS
6-10	SUPPLEMENTAL TRAINING	KEESLER AFB, MS
10-12	MASTER INSTRUCTOR TRAINING	KEESLER AFB, MS

204. SUMMARY/INDEX OF LIVE/SIMULATED EVENTS. Tables 2-1 thru 2-4 contains a listing of the METOC Analyst's, Combat Capable, Combat Ready, Combat Qualification and Full Qualification training events with associated page numbers.

Table 2-1.--METOC Analyst Combat Capable Training Events.

EVENT	GOAL	PAGE
FAM-100	Introduce atmospheric physics	2-16
FAM-101	Introduce atmospheric dynamics	2-17
FAM-102	Introduce weather satellite imagery	2-17
FAM-103	Introduce atmospheric dynamics and physics theories	2-17
FAM-104	Introduce synoptic scale forecasting and prognosis techniques	2-18
FAM-105	Introduce global and regional METOC model data	2-18
FAM-106	Introduce METOC correspondence in Naval Message Traffic Format	2-19
FAM-107	Introduce SKEW-T LOG P diagram analyzing and forecasting techniques	2-19
FAM-108	Introduce Doppler radar imagery analyzation and interpretation techniques and theories	2-20
FAM-109	Introduce forecasting convective and non-convective severe weather	2-20
FAM-110	Introduce weather element forecasting (Mesoscale analysis and forecasting) techniques	2-20
FAM-111	Introduce aviation weather forecasting techniques and procedures	2-21
FAM-112	Introduce tactical decision aid software and products	2-21
FAM-113	Introduce space weather products	2-21
FAM-114	Introduce alphanumeric model data messages	2-22
FAM-115	Introduce METOC support to MAGTF operations	2-22
FAM-116	Introduce tropical weather forecasting	2-22

Table 2-1.--METOC Analyst Combat Capable Training Events--Continued.

EVENT	GOAL	PAGE
FAM-117	Introduce centrally prepared product verification techniques.	2-23
FAM-118	Introduce weather warnings and advisories	2-23
FAM-119	Introduce limited data forecasting	2-23
FAM-120	Introduce basic networking administration functions	2-23
JCP-121	To certify knowledge METOC support architecture	2-25
JCP-122	To certify knowledge of local area policies and procedures	2-25
JCP-123	To certify knowledge of regulations, order, and instructions governing classified materials and software	2-26
JCP-124	To certify knowledge of operating garrison METOC equipment	2-26
JCP-125	To certify knowledge of METOC software applications	2-26
JCP-126	To certify knowledge of atmospheric fundamentals	2-27
JCP-127	To certify knowledge of analyzing and interpreting upper atmospheric weather charts	2-28
JCP-128	To certify knowledge of analyzing and interpreting a surface pressure chart	2-28
JCP-129	To certify knowledge of analyzing and interpreting a thickness chart	2-29
JCP-130	To certify knowledge of analyzing and interpreting a vorticity chart	2-29
JCP-131	To certify knowledge of analyzing and interpreting satellite imagery	2-30
JCP-132	To certify knowledge of analyzing and interpreting Doppler radar imagery	2-30
JCP-133	To certify knowledge of conducting streamline analysis	2-31
JCP-134	To certify knowledge of analyzing and forecasting atmospheric conditions from the SKEW T LOG P diagram	2-31
JCP-135	To certify knowledge of applied meteorological reasoning in the forecasting of movement and intensity of synoptic scale features	2-32
JCP-136	To certify knowledge of forecasting severe weather	2-32
JCP-137	To certify briefing of METOC features from (re)analyzed products	2-33
JCP-138	To certify knowledge of the content and development of correspondence that relates to METOC operations	2-33
JCP-139	To certify knowledge of Terminal Aerodrome Forecast content and format	2-34
JCP-140	To certify knowledge of weather warnings	2-34
JCP-141	To certify knowledge of flight weather briefing	2-35
JCP-142	To certify knowledge of flight weather packets	2-35
JCP-143	To certify knowledge of verifying meteorological model output	2-36
JCP-144	To certify knowledge of surf forecasting	2-36
JCP-145	To certify knowledge of limited data forecasting	2-37
JCP-146	To certify knowledge of generation of specialized mission support products in response to RFIs	2-37
JCP-147	To certify knowledge of tailored METOC weather briefs	2-37

Table 2-1.--METOC Analyst Combat Capable Training Events--Continued.

EVENT	GOAL	PAGE
JCP-148	To certify knowledge of basic network administration functions	2-38
CMO-149	Operate garrison METOC equipment to provide METOC support to Base operations	2-39
CMO-150	Conduct garrison METOC Support	2-39

Table 2-2.--METOC Analyst Combat ready Training events.

EVENT	GOAL	PAGE
FAM-200	Familiarization with MAGTF operations	2-40
FAM-201	Familiarization with the components and capabilities of the Meteorological Mobile Facility Replacement (METMFR)	2-41
FAM-202	Familiarization with the components and capabilities of the Navy Integrated Tactical Environment System (NITES)	2-42
FAM-203	Familiarization with the knowledge of configuring METOC applicable software	2-42
FAM-204	Familiarization with the knowledge required for assessing the impacts of meteorological and oceanographic elements on MAGTF operations	2-43
FAM-205	Familiarization with equipment casualty reporting	2-43
FAM-206	Familiarization with METOC logistics and external support requirements	2-43
FAM-207	Familiarization with deployment requirements and procedures	2-44
FAM-208	Familiarization with environmental impact briefings and reporting	2-44
FAM-209	Familiarization with oceanographic forecasting and impact assessment	2-45
FAM-210	Familiarization with METOC database functions	2-45
FAM-211	Familiarization with products and sources for assessment of METOC impacts on MAGTF operations	2-45
FAM-212	Familiarization with utilizing tactical equipment for forecasting tropical cyclone development and movement	2-46
PPP-213	Develop and supervise tower visibility observer training curriculum and schedule	2-47
PPP-214	Supervise adherence and implementation of established METOC administrative programs, procedures, and plans	2-47
PPP-215	Draft logistical support program reports and documents	2-48
PPP-216	Supervise and conduct watch turnover procedures	2-48
PPP-217	Conduct watch procedures in accordance with orders and directives	2-48
PPP-218	Conduct quality assurance on Apprentice METOC Analyst products	2-49
PPP-219	Mentor Apprentice METOC Analyst on MOS progression training	2-49
PPP-220	Draft input to Annex H of operational orders	2-50

Table 2-2.--METOC Analyst Combat Ready Training Events--Continued.

EVENT	GOAL	PAGE
PPP-221	Implementation and supervision of established security procedures	2-50
PPP-222	Conduct and state security and classified materials storage and transportation procedures and requirements	2-50
PPP-223	Conduct emergency destruction procedures	2-51
CMO-224	Implement deployment requirements and procedures	2-52
CMO-225	Conduct tactical METOC support	2-52
CMO-226	Prepare METOC messages in a tactical environment	2-53
CMO-227	Conduct METOC operations in accordance with security regulations and orders	2-53
CMO-228	Forecast meteorological events using limited data in a tactical environment	2-53
CMO-229	Generate specialized mission support products in response to RFI in a tactical environment	2-54
CMO-230	Develop tailored METOC weather brief in a tactical environment	2-54
CMO-231	Forecast and brief tropical cyclone development and movement utilizing tactical equipment	2-55
CMO-232	Create a surf forecast utilizing tactical equipment	2-55
CMO-233	Conduct a climatological brief using tactical equipment	2-56
CMO-234	Prepare and disseminate a deployment brief	2-56
CMO-235	Conduct an amphibious warfare brief	2-57
MIA-236	Attain proficiency in METOC tactical application software	2-58
MIA-237	Utilize tactical decision aid programs to produce specified products	2-58
MIA-238	Conduct a search and rescue brief	2-59
MIA-239	Conduct an aviation strike brief	2-59
MIA-240	Conduct a mission analysis	2-60
MIA-241	Assess METOC impacts to amphibious operations	2-60
MIA-242	Assess METOC impacts on aviation operations	2-61
MIA-243	Assess METOC impacts on ground operations	2-61
MIA-244	Assess METOC impacts on intelligence operations	2-62
MIA-245	Assess METOC impacts on communication operations	2-62
MIA-246	Assess METOC impacts on nuclear, biological and chemical operations	2-63
MIA-247	Assess METOC impacts on logistical operations	2-63
EQP-248	Utilizing METOC software and hardware, develop mission support forecasts and products	2-64
EQP-249	Supervise maintenance of METOC equipment	2-65
EQP-250	Operate the garrison Doppler radar system	2-65
EQP-251	Configure and operate the garrison lightning position and tracking system	2-66
EQP-252	Display operating knowledge of tactical Doppler radar system(s)	2-66

Table 2-2.--METOC Analyst Combat Ready Training Events--Continued.

EVENT	GOAL	PAGE
EQP-253	Display operating knowledge of tactical satellite system(s)	2-67
EQP-254	Embarkation of the METMF(R)	2-67
EQP-255	Perform intermediate network administrative functions	2-68
EQP-256	Setup and conduct operational checks of each subsystem inherent to the METMF(R)	2-68
EQP-257	Support tactical operations utilizing the METMF(R)	2-69
EQP-258	Support tactical operations utilizing the NITES IV	2-70
EQP-259	Operate garrison METOC equipment to provide METOC to base operations	2-71

Table 2-3.--METOC Analyst Combat Qualification Training Events.

EVENT	GOAL	PAGE
PPP-300	Draft input to annexes of operational orders	2-72
PPP-301	Implement and supervise logistical support programs	2-72
PPP-302	Identify and solicit METOC support requirements	2-73
PPP-303	Identify METOC support issues	2-73
PPP-304	Conduct quality assurance on Journeyman METOC Analyst products	2-73
PPP-305	Conduct security procedures in accordance with security regulations and orders	2-74
CMO-306	Conduct METOC support operations for Marine Expeditionary Forces	2-75
CMO-307	Conduct METOC support functions in support of Marine Expeditionary Forces and major subordinate command plans and operations	2-75
CMO-308	Conduct joint operation SME functions	2-76
CMO-309	Conduct a pre-deployment inspection	2-76
CMO-310	Supervise the embarkation of the METMF(R)	2-76
MIA-311	Utilize tactical decision aid programs to produce products to support planning and execution of joint operations and missions	2-78
EQP-312	Deploy the METMF(R)	2-79
EQP-313	Develop and manage the METOC database	2-79
EQP-314	Supervise METOC equipment maintenance	2-80
EQP-315	Display knowledge of Doppler radar system management	2-80
EQP-316	Perform system management functions of subsystems inherent to the METMF(R)	2-81

Table 2-4.--METOC Analyst Full Combat Qualification Training Events.

EVENT	GOAL	PAGE
PPP-400	Validate and submit input to annexes of operational orders	2-82
PPP-401	Manage a security program	2-83
PPP-402	Manage training program	2-83
PPP-403	Manage personnel program	2-84
PPP-404	Manage logistical support program	2-84
PPP-405	Manage fiscal requirements	2-85
PPP-406	Manage administrative procedures	2-85
PPP-407	Identify METOC support issues	2-86
PPP-408	Manage METOC equipment requirements	2-86
PPP-409	Manage garrison Doppler radar operations	2-86
PPP-410	Perform the supervisory functions within the METOC service	2-87
PPP-411	Enhance quality of METOC products through the development, implementation, and tracking of a robust quality assurance program	2-88
PPP-412	Develop and perform administrative meteorological network functions	2-88
PPP-413	Develop and coordinate procedures for the embarkation and operation of the METMF(R)	2-89

205. SUMMARY/INDEX OF EVENTS FOR INSTRUCTOR EVENTS. Table 2-5 contains a listing of the instructor training events with associated page numbers.

Table 2-5.--Instructor Training Events.

EVENT	GOAL	PAGE
FSI-500	Attend basic instructor’s course	2-90
FSI-501	Complete instructor certification process	2-90
FSI-502	Complete annual re-qualification	2-91
FSI-503	Complete supplemental instructor training	2-91
FSI-504	Complete master training specialist program	2-91
MAI-510	To certify knowledge of METOC subjects	2-92
MAI-511	To certify the knowledge of techniques of military instruction for instructor designation	2-92

206. SUMMARY/INDEX OF EVENTS FOR REQUIREMENTS/DESIGNATIONS AND QUALIFICATIONS. Table 2-6 contains a listing of the events for requirements, qualifications, and designations with associated page numbers.

Table 2-6.--Requirements, Qualification, Designation List.

EVENT	GOAL	PAGE
FCC-600	Complete METOC correspondence courses	2-93
FCC-601	Complete system related correspondence courses	2-93
FCC-602	Tracking code for security manager’s course	2-94
FCC-603	Tracking code for METOC chief’s course (not active)	2-94
FCC-604	Tropical code for tropical weather analysis course	2-94
FCC-605	Tracking code for radar manager’s course	2-94
FCC-606	Tracking code for joint METOC tactical application course	2-95
JCP-607	Attain certification required for Journeyman METOC Analyst qualification	2-95
JCP-608	Attain Journeyman METOC Analyst qualification	2-96
MMA-609	Attain Master METOC Analyst qualification	2-96
FSI-610	Attain formal schools instructor qualification	2-97
MAI-611	Attain METOC analyst instructor qualification	2-98
DES-612	Attain METOC chief designation	2-98
DES-613	Attain METOC section leader designation	2-98

210. ACADEMIC TRAINING

1. General. Meteorological and oceanographic support revolves around products derived from raw data that is plotted, analyzed, and interrogated using analytical rigor based on knowledge and application of meteorological theories, rules of thumb and computer model algorithms. In order to become proficient within the METOC structure, all 6800 personnel receive extensive academic training in meteorological and oceanographic sciences.

2. Prerequisites

a. The Military Occupational Specialties (MOS) Manual (MCO P1200.7) outlines the requirements for all MOS’s in the Marine Corps.

b. Personnel in the 6821 MOS transition to the 6842 MOS through attendance and completion of the Meteorological and Oceanographic Analyst/Forecaster (MOAF) course aboard Keesler AFB, MS. Successful completion of the following prerequisites are required in order to attend the course. Prior to assignment to the chapter 2 syllabus all personnel shall complete the MOAF course.

(1) Oceanography Course (Event: ACA 604).

(2) Aerographer’s Mate Module 5 Course (Event: ACA-607) or Marine Corps Distance Learning Course Basic Meteorology – DT68005.

(3) Introduction to Forecasting Course (Event: ACA-608).

(4) Final Top Secret Clearance adjudicated by DONCAF. (Event: ACA-601).

(5) Apprentice METOC Analyst Qualification (Event: QAL-609).

(6) Forecast Support Qualification (Event: QAL-611).

(7) Lead METOC Designation preferred (Event: DES-612).

(8) Recommendation for MOAF attendance (Event: FSO-422).

4. Formal Academic training. Formal academic training courses are required to ensure uniform levels of training in core competencies and skills. Formal schools are schools that receive Navy and Marine Corps educational funding and have approved syllabuses.

a. Coding. Formal schools are coded by the Course Identification Number (CIN) for Navy Courses and Course Identification (CID) for Marine Corps courses.

b. Appendix A provides a listing of all courses pertaining to this syllabus.

5. References. Appendix B contains a listing of references utilized in the development of the training and readiness syllabus. Individual training events require adherence to the references contained within the table. Due to the comprehensive nature of the events, extensive references, and rapid changing content, including references in each event would not be prudent. Resident knowledge of the references lies within the METOC instructor, Master METOC analyst, and METOC officer.

220. EVENT TRAINING

1. Progression model. Figure 2.1 depicts the training progression model for the 6842 MOS.

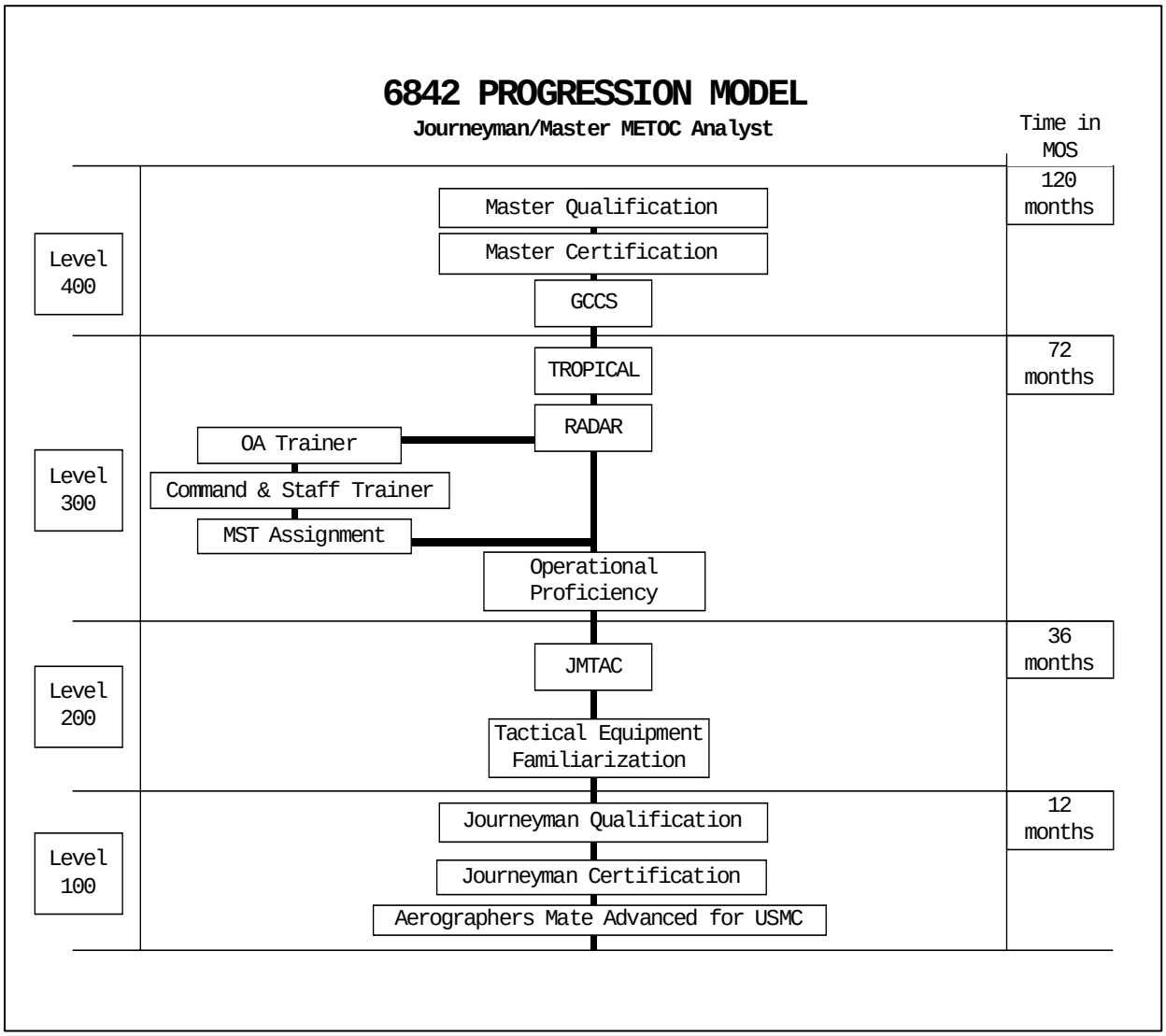


Figure 2-1.--Progression Model for 6842 Military Occupational Specialty.

221. EVENT/CRP. Table 2-7 provides a listing of the events, hours and Combat Readiness Percentage (CRP) for each stage of the syllabus.

Table 2-7.--Event/CRP Breakdown Table.

COMBAT CAPABLE STAGE OF TRAINING			
STAGE	**EVENTS**	**HOURS**	**PERCENT**
FAMILIARIZATION (FAM)	21	957	40
JOURNEYMAN CERTIFICATION PROCESS (JCP)	28	117.5	15
CONSOLIDATED METOC OPERATIONS	2	25	5
COMBAT CAPABLE TOTALS:	**51**	**1099.5**	**60**
COMBAT READY STAGE OF TRAINING			
STAGE	**EVENTS**	**HOURS**	**PERCENT**
FAMILIARIZATION (FAM)	13	28	3
PLANS, POLICIES AND PROCEDURES (PPP)	11	80	3
CONSOLIDATED METOC OPERATIONS (CMO)	11	421	3
METOC IMPACT ASSESSMENT (MIA)	12	112	3
EQUIPMENT (EQP)	12	160	3
COMBAT READY TOTALS:	**59**	**801**	**15**
COMBAT QUALIFICATION STAGE OF TRAINING			
STAGE	**EVENTS**	**HOURS**	**PERCENT**
PLANS, POLICIES AND PROCEDURES (PPP)	6	329	5
CONSOLIDATED METOC OPERATIONS (CMO)	5	112	5
METOC IMPACT ASSESSMENT (MIA)	1	24	5
EQUIPMENT (EQP)	5	142	5
COMBAT QUALIFICATION TOTALS:	**17**	**607**	**20**
FULL COMBAT QUALIFICATION STAGE OF TRAINING			
STAGE	EVENTS	HOURS	PERCENT
PLANS, POLICIES AND PROCEDURES (PPP)	14	399	5
FULL COMBAT QUALIFICATION TOTALS:	**14**	**399**	**5**
INSTRUCTOR STAGE OF TRAINING			
STAGE	EVENTS	HOURS	PERCENT
FORMAL SCHOOL INSTRUCTION (FSI)	5	200	0
METOC ANALYST INSTRUCTOR (MAI)	2	113	0
INSTRUCTOR TRAINING TOTALS:	**7**	**313**	**0**

230. EVENT PERFORMANCE REQUIREMENTS

1. Purpose. The purpose of Training and Readiness (T&R) Manual events is to enhance combat readiness of METOC units. Core and core plus skills are advanced through the implementation of events, approved by fleet representation, to provide a measurable and chronological advancement of skills.

2. General

a. This manual is written to allow for local requirements and yet remain unclassified. DC AVN and CG MCCDC encourage squadrons to use the full range of tactics in the tactical manuals and adopt the latest in training requirements.

b. Live Training. Training event condition codes listed as **L** (live), **L/S** (live preferred/simulator optional) in this syllabus designate training to be

conducted without the aid of simulator devices. Training not conducted in the live training environment shall be replaced with simulation where applicable as indicated in the condition code. A number of the live and simulated events require interaction with external C3 agencies. This interaction/interface is important to the individual, crew, and agency training.

c. Simulator Training. Training event condition codes listed as **S** (simulator), and **S/L** (simulator preferred/live optional) in this syllabus designate training to be conducted as indicated in the condition code. A number of the live and simulated events require interaction with external agencies. This interaction/interface is important to the individual, crew, and agency training.

3. Evaluation of Training. Evaluation will be conducted by either written/oral examination or a combination of the two means. Operational and system related subjects will be evaluated by practical application means whenever possible. At the commanders' discretion, a Marine may receive credit for task completion through an oral explanation of the steps rather than by performing the task.

4. Implementation

a. Unit commanders are the designating authority. Unit commanders may further delegate designation authority to the METOC Officer in Charge (OIC) or senior Staff Non-commissioned in charge in the absence of an METOC Officer. Assigning completion credit for events resides with the designating authority and may be delegated as outlined.

b. Events shall be conducted by the designated trainee and administered, evaluated, and documented by the designating authority.

c. Documentation and tracking of event completion and progression will be completed by use of the ATRIMS program and in individual training jackets.

5. Components of a T&R event. An event contained within a T&R Manual is an Individual or Collective Training Standard and the following elements, dependent on the tier in which they are contained:

1/	2/	3/	4/	5/	6/	7/
SAM-XXX	0.5	T,C,R,	E	EQUIP	L/S	(NS)

Goal. State the terminal learning objective.

Requirement. List the specific tasks for the event; indicate what the crew/individual must accomplish.

Performance Standard. Describe the measurable level of proficiency for that core competency/skill.

Prerequisite. Provides a listing of academic training or other T&R events that must be completed prior to satisfying the task.

External Syllabus Support. A listing or description of the external support requirements that may be required to satisfy the completion of the task. May include range requirements, support aircraft, targets, training devices, or other personnel and equipment.

NOTES:

1/ Events are coded per Appendix B of T&R Manual Administrative Manual.

2/ Projected event duration is furnished as a planning tool.

3/ Denotes the applicable Program of Instruction (Basic POI is understood), Z is reserve, R is refresher.

4/ An "**E**" indicates an Evaluated event.

5/ The equipment or activity subcategory is listed **GE** = Garrison Equipment; **M** = METMF(R); **N** = NITES IV; **C** = Computer System

6/ Requirement Code: **L** = live Training; **S** = simulator training; **L/S** = live preferred/simulator optional; **S/L** = simulator preferred/live optional; **N** = Night; Where contained within **()** denotes optional conditions.

7/ Elements of the events may be deleted if not applicable to the event. (example: External Syllabus Support may be deleted if not required for the event)

6. Event Codes. Table 2-8 provides a listing of event codes.

Table 2-8.--Event Code and Description.

Event Code	Description
FAM	FAMILIARIZATION
JCP	JOURNEYMAN CERTIFICATION PROCESS
CMO	CONSOLIDATED METOC OPERATIONS
PPP	PLANS, POLICIES, AND PROCEDURES
EQP	EQUIPMENT
MIA	MISSION IMPACT ASSESSMENT
MAI	METOC ANALYST INSTRUCTOR
WTI	WEAPONS and TACTICS INSTRUCTOR
MMA	MASTER METOC ANALYST
FCC	FORMAL AND CORRESPONDENCE COURSE
FSI	FORMAL SCHOOL INSTRUCTOR
DES	DESIGNATIONS

231. COMBAT CAPABLE TRAINING

1. Familiarization Stage (FAM)

a. Purpose. To introduce, evaluate, and develop basic knowledge and core skills of forecasting theories and techniques required for obtaining the 6842 Military Occupational Specialty (MOS).

b. General. This portion of the Combat Ready Stage of training will be conducted at the Meteorological and Oceanographic Analyst Forecaster (MOAF) course located at Keesler AFB, MS.

c. Crew Requirements

(1) Qualified Instructor.

(2) Apprentice METOC Analyst assigned to syllabus.

d. Academic Training

(1) Academic training will be conducted by qualified instructors that have completed the instructor syllabus.

(2) Events contained in this stage shall be completed in chronological order. Personnel assigned to this stage shall complete the preceding event prior to advancing in the syllabus.

e. Event Training

FAM-100	94	Z	E	N/A	L

Goal. Introduce atmospheric physics.

Requirement. Identify and technically discuss the subjects listed:

(1) Atmospheric structure.
(2) Atmospheric variables.
(3) Vectors.
(4) Pressure.
(5) Temperature and moisture.
(6) Fundamentals of atmospheric concepts.
(7) Advection.
(8) Thermal winds.
(9) Thickness charts.
(10) Heat transfer.
(11) Cloud formation and dissipation.
(12) Precipitation types.

Performance Standard. The Apprentice METOC Analyst shall successfully pass all progress checks with 80% proficiency and achieve 75% proficiency on written measurements.

Prerequisite. None.

FAM-101	108	Z	E	N/A	L

Goal. Introduce atmospheric dynamics.

Requirement. Identify and technically discuss the subjects listed:

(1) Rotational and circular motion.
(2) Atmospheric forces.
(3) Divergence.
(4) Vorticity.
(5) Jet streams.
(6) Atmospheric wave terminology.
(7) 500 mb heights and vorticity chart analysis.
(8) Vertical motions.
(9) Air masses.
(10) Frontal systems.
(11) Evolution of frontal systems.
(12) Synoptic scale systems.
(13) Evolution of synoptic scale baroclinic systems.
(14) Local modification to large scale circulations.

Performance Standard. The Apprentice METOC Analyst shall successfully pass all progress checks with 80% proficiency and achieve 75% proficiency on written measurements.

Prerequisite. FAM-100.

FAM-102	90	Z	E	N/A	L

Goal. Introduce weather satellite imagery.

Requirement. Identify and technically discuss the subjects listed:

(1) Advantages and disadvantages.
(2) Principles of weather satellite imagery.
(3) Weather satellite types.
(4) Weather satellite imagery and enhancements.
(5) Weather satellite derived products.
(6) Weather satellite viewing considerations.
(7) Weather satellite analysis.

Performance Standard. The Apprentice METOC Analyst shall successfully pass all progress checks with 80% proficiency and achieve 75% proficiency on written measurements.

Prerequisite. FAM-100 and FAM-101.

FAM-103	90	Z	E	N/A	L

Goal. Introduce atmospheric dynamics and physics theories.

Requirement. The Marine shall exhibit comprehensive knowledge of the application of theoretical dynamics and physics by initializing, analyzing, briefing meteorological features and providing sound meteorological reasoning for placement of features. The student shall:

(1) Initial model data.

(2) Analyze or reanalyze:
    (a) Surface chart.
    (b) Thickness chart.
    (c) Vorticity.
    (d) Upper Air charts.
    (e) Satellite imagery.
    (f) Radar imagery.
    (g) Weather depiction charts.
(3) Discuss meteorological reasoning for analyzed features.

Performance Standard. Apprentice METOC Analyst shall complete the requirement without violating meteorological rules. The Apprentice METOC Analyst shall successfully pass all progress checks with 80% proficiency and achieve 75% proficiency on written measurements.

Prerequisite. FAM-100 through FAM-102 inclusive.

FAM-104 80.5 Z E N/A L

Goal. Introduce synoptic scale forecasting and prognosis techniques.

Requirement. The Marine shall analyze centrally prepared products and applying academic principles, forecast synoptic scale features by completing the listed items:

(1) Initial model data.
(2) Analyze or reanalyze:
    (a) Surface chart.
    (b) Thickness chart.
    (c) Vorticity.
    (d) Upper Air charts.
    (e) Satellite imagery.
    (f) Radar imagery.
    (g) Weather depiction charts.
(3) Develop forecasted intensity and location of weather features.
(4) Discuss meteorological reasoning for forecasted elements.

Performance Standard. Apprentice METOC Analyst shall complete the requirement without violating meteorological rules. The Apprentice METOC Analyst shall successfully pass all progress checks with 80% proficiency and achieve 75% proficiency on written measurements.

Prerequisite. FAM-100 through FAM-103 inclusive.

FAM-105 24 Z E N/A L

Goal. Introduce global and regional METOC model data.

Requirement. The Marine will be required to:

(1) Identify the model type.
(2) State the strengths and weakness for each type of model runs.

Performance Standard. The Apprentice METOC Analyst shall successfully pass all progress checks with 80% proficiency and achieve 75% proficiency on written measurements.

Prerequisite. FAM-100 through FAM-104 inclusive.

FAM-106	24	Z	E	N/A	L

Goal. Introduce METOC correspondence in Naval Message Traffic Format (MTF).

Requirement. The Apprentice METOC Analyst shall be able to identify and technically discuss the content and format of the messages listed:

(1) Casualty Reports (CASREP).
(2) Weather Forecast (WEAX).
(3) Joint Operational Area Forecast (JOAF).
(4) Tactical Atmospheric Summary (TAS).
(5) Assault Forecast (ASLTFCST).
(6) Amphibious Objective Area Forecast (AOAFCST).
(7) Strike Forecast (STRKFCST).
(8) Chemical Downwind Message (CDM).

Performance Standard. The Apprentice METOC Analyst shall successfully pass all progress checks with 80% proficiency and achieve 75% proficiency on written measurements.

Prerequisite. FAM-100 through FAM-105 inclusive.

FAM-107	24	Z	E	N/A	L

Goal. Introduce SKEW T LOG P diagram analyzing and forecasting techniques.

Requirement. The Apprentice METOC Analyst shall analyze a SKEW T LOG P diagram for elements listed. SNM must be able to discuss how the analyzed elements are applicable to current and forecasted weather phenomenon:

(1) Compute indices.
    (a) Lifted index.
    (b) KI index.
    (c) Sweat index.
    (d) Showalter’s index.
    (e) Total Totals.
(2) Analyze negative/positive energy areas.
(3) Analyze for equilibrium levels.
(4) Compute turbulent areas.
(5) Compute tops of convective activity.
(6) Compute contrails.
(7) Compute icing types and levels.
(8) Compute maximum and minimum temperatures.
(9) Compute hail.
(10) Compute thunderstorm gusts.
(11) Analyze freezing level.
(12) Analyze for areas of moisture.
(13) Compute D-Values.
(14) Compute relative humidity.

Performance Standard. The Apprentice METOC Analyst shall successfully pass all progress checks with 80% proficiency and achieve 75% proficiency on written measurements.

Prerequisite. FAM-100 through FAM-106 inclusive.

FAM-108 65 Z E N/A L

Goal. Introduce Doppler radar imagery analyzation and interpretation techniques and theories.

Requirement. Upon completion of academic training and when given Radar imagery, the Apprentice METOC Analyst shall determine and state the type of Doppler radar imagery and identify meteorological features on the products listed. The Apprentice METOC Analyst must be able to discuss justification for identifying features:

(1) Base reflectivity products.
(2) Base velocity products.
(3) Base spectrum width products.
(4) Derived products.

Performance Standard. Achieve at least 75% proficiency on written measurement and complete the requirement without violating meteorological theories.

Prerequisite. FAM-100 through FAM-107 inclusive.

FAM-109 65 Z E N/A L

Goal. Introduce forecasting convective and non-convective severe weather.

Requirement. The METOC Analyst Apprentice, when given required charts, shall forecast convective and non-convective severe weather elements listed and provide meteorological justification for forecast:

(1) Vertical and horizontal wind shear gradients.
(2) Tornadic activity.
(3) Thunderstorm activity.
(4) Tropical systems.
(5) Winter storms.

Performance Standard. Given METOC data, knowledge of atmospheric physics and dynamics forecast for specified severe weather elements in accordance with the references.

Prerequisite. FAM-100 through FAM-108 inclusive.

FAM-110 128.5 Z E N/A L

Goal. Introduce weather element forecasting (mesoscale analysis and forecasting) techniques.

Requirement. Upon completion of academic training, the Apprentice METOC Analyst will exhibit a comprehensive knowledge of mesoscale forecasting by analyzing, forecasting and briefing mesoscale meteorological features.

Performance Standard. Achieve at least 75% proficiency on written measurement and complete the requirement without violating meteorological theories.

Prerequisite. FAM-100 through FAM-109 inclusive.

FAM-111	70.5	Z	E	N/A	L

Goal. Introduce aviation weather forecasting techniques and procedures.

Requirement. The Apprentice METOC Analyst shall receive training on aviation weather forecasting, generation of aviation weather products, and briefing products. The Apprentice METOC Analyst shall, at a minimum, analyze and forecast for:

(1) Turbulence.
(2) Icing.
(3) Take off weather.
(4) Upper level weather elements.
(5) Arrival weather elements.

Performance Standard. Given academic training, METOC data, mission data, and in accordance with the references, forecast for specified forecast aviation weather elements and provide aviation weather support products within course tolerances.

Prerequisite. FAM-100 through FAM-110 inclusive.

FAM-112	68.5	Z	E	N/A	L

Goal. Introduce tactical decision aid software and products.

Requirement. The Apprentice METOC Analyst shall receive training on tactical decision aid software and products to support combat operations, and then apply the knowledge to generate METOC products/briefs in support of simulated combat operations. The Apprentice METOC Analyst shall produce:

(1) An aviation strike forecast.
(2) An amphibious warfare brief.
(3) Search and rescue brief.
(4) Drop zone forecast.
(5) Surf forecast.
(6) Riverine products.

Performance Standard. Given METOC data, academic training and knowledge of combat operational METOC requirements, provide METOC support to simulated combat operations.

Prerequisite. FAM-100 through FAM-111 inclusive.

FAM-113	24	Z	E	N/A	L

Goal. Introduce space weather products.

Requirement. The Apprentice METOC Analyst shall receive training on space weather products and derive mission impacts based on received products.

Performance Standard. Upon completion of academic training, Apprentice METOC Analyst shall take a written exam on space weather products and derived impacts and achieve 70% proficiency.

Prerequisite. FAM-100 through FAM-112 inclusive.

FAM-114	24	Z	E	N/A	L

Goal. Introduce alphanumeric model data messages.

Requirement. The Apprentice METOC Analyst shall receive training on alphanumeric model data messages, and application of the data. Apprentice METOC Analyst will:

(1) Discuss decoding of the product.
(2) Effective use of the model data for forecasting.
(3) Model strengths and weaknesses.

Performance Standard. Upon completion of academic training, the Apprentice METOC Analyst shall take a written exam (achieving 70% proficiency) and discuss the content, uses, and coding of each model data message.

Prerequisite. FAM-100 through FAM-113 inclusive.

FAM-115	36	Z	E	N/A	L

Goal. Introduce METOC support to MAGTF operations.

Requirement. The Apprentice METOC Analyst shall receive training on MAGTF METOC support, Marine Corps METOC equipment, and operations. The Apprentice METOC Analyst will be able to state or identify the following:

(1) Units supported.
(2) METOC structure.
(3) METOC equipment.
(4) METOC operational requirements.

Performance Standard. Upon completion of academic training, student shall take a written exam and achieve 70% proficiency.

Prerequisite. FAM-100 through FAM-114 inclusive.

FAM-116	40	Z	E	N/A	L

Goal. Introduce tropical weather forecasting.

Requirement. The Apprentice METOC Analyst shall be familiarized with techniques of decoding tropical storm messages, streamline analysis and forecasting techniques.

Performance Standard. Upon completion of academic training, the Apprentice METOC Analyst shall take a written exam. Proficiency of 80% or higher is required.

Prerequisite. FAM-100 through FAM-115 inclusive.

FAM-117 24 Z E N/A L

Goal. Introduce centrally prepared product verification techniques.

Requirement. Through practical application, SNM will verify centrally prepared products by identifying strengths and weaknesses of centrally prepared METOC products.

Performance Standard. Upon completion of academic training, student shall, through practical application and written exam, verify analysis. Proficiency of 80% or higher is required.

Prerequisite. FAM-100 through FAM-116 inclusive.

FAM-118 24 Z E N/A L

Goal. Introduce weather warnings and advisories.

Requirement. SNM will be familiarized with weather warnings and advisories, the content of each warning and the forecasting techniques to determine the required warning and/or advisory.

Performance Standard. Upon completion of academic training, student shall take a written exam. Proficiency of 80% or higher is required.

Prerequisite. FAM-100 through FAM-117 inclusive.

FAM-119 64 Z E N/A L

Goal. Introduce limited data forecasting.

Requirement. SNM is to obtain the capability to create a plain language and aviation forecast valid for a 48 hours period using one of the listed products:

(1) Satellite image.
(2) SKEW T LOG P diagram.
(3) Surface chart.

Performance Standard. SNM shall take a written test. Proficiency of 80% or higher is required.

Prerequisite. FAM-100 through FAM-118 inclusive.

FAM-120 48 Z E N/A L

Goal. Introduce basic network administration functions.

Requirement. Utilizing an established METOC network and be able to perform the following base network functions in order to identify, safeguard and maintain network integrity:

(1) Log on to the network.
(2) Monitor network usage by subordinates.
(3) Connect to other computers on the network.

(4) Transfer data to other computers on the network.
(5) When directed, share folders and files.
(6) Monitor access to/from the network and identify possible intrusions/problems.
(7) When directed, add computers to the network.

Performance Standard. SNM shall complete the requirement without compromising the integrity of the network or data.

Prerequisite. FAM-100 through FAM-119 inclusive.

2. JOURNEYMAN CERTIFICATION STAGE

a. Purpose. To certify the application and retention of the knowledge of meteorological physics and dynamics required for Journeyman METOC Analyst qualification.

b. General. This portion of the syllabus shall be completed at the first operational METOC units assigned and adhered to the following.

(1) The trainer shall utilize the certification checklist, Appendix F to track review of materials prior to certification board.

(2) A certification board shall be convened only after initial review of material by certified trainer.

(3) A certification board shall consist of, at a minimum, the METOC Officer, the senior enlisted METOC Marine and one qualified Journeyman or Master METOC Analyst.

(4) Refresher training is required when transferred to a new geography region. Transferring Marine shall be assigned to this stage of training upon arrival at the new duty station.

c. Crew Requirements

(1) Qualified Instructor.

(2) Apprentice METOC Analyst assigned to syllabus.

d. Academic Training

(1) Academic training will be conducted by qualified instructors.

(2) Events contained in this stage shall be completed in chronological order. Personnel assigned to this stage shall complete the preceding event prior to advancing in the syllabus.

(3) Personnel assigned to this stage shall complete the stage of training within 90 days of assignment.

e. Event Training

JCP-121 2.0 Z,R E N/A L

Goal. To certify knowledge of METOC support architecture.

Requirement. The Apprentice METOC Analyst shall receive training on the components, billets, equipment and capabilities that comprise the Marine Corps METOC support architecture. Upon completion of academic training the Apprentice METOC Analyst shall be required to state and discuss the missions, composition, equipment and capabilities of the following METOC support unit/billets:

(1) MCAS/MCAF METOC support.
(2) Marine Wing Support Group (MWSG).
(3) Marine Expeditionary Force (MEF).
(4) METOC Support Team (MST).
(5) Marine Wing Support Squadron (MWSS) Weather Service Section.
(6) Staff Weather Officer (SWO).
(7) Joint Weather Officer (JWO).
(8) Joint METOC Forecast Center (JMFU).
(9) Aircraft Command Element (ACE) Weather Officer (ACE WXO).
(10) Mobile Meteorological Facility Replacement (MetMF(R)).
(11) NITES IV.

Performance Standard. The Apprentice METOC Analyst shall be evaluated, either verbally or written, on the ability identify the components, billets, unit supported, equipment inherent to each support element and capabilities of the billets/components.

Prerequisite. All FAM events.

JCP-122 2.0 Z,R E N/A L

Goal. To certify knowledge of local area policies and procedures.

Requirement. The Apprentice METOC Analyst shall receive training on the local area knowledge. Without the aid of references, define and discuss the listed local area knowledge:

(1) Airfield description.
(2) SOP procedures.
(3) Command support structure.
(4) Destructive weather procedures.
(5) Security requirements.
(6) Watch composition and schedule.
(7) Watch procedures.
(8) Local forms.
(9) Reference and technical library procedures.
(10) Local area forecaster handbook.
(11) Weather regimes.

Performance Standard. Without the aid of references, the Apprentice METOC Analyst must respond to questions (either verbal or written) to 80 % proficiency.

Prerequisite. All FAM events.

JCP-123 1.0 Z,R E N/A L

Goal. To certify knowledge of regulations, orders and instructions governing classified materials and software.

Requirement. The Apprentice METOC Analyst shall identify and state the security regulations, orders and instructions governing security and state the general content of each.

Performance Standard. The Apprentice METOC Analyst shall be evaluated, written or orally, and must receive 80% proficiency to satisfy the requirement.

Prerequisite. All FAM events.

JCP-124 1.0 Z,R E N/A L

Goal. To certify knowledge of operating garrison METOC equipment.

Requirement. The Apprentice METOC Analyst shall define and discuss strengths, weaknesses and capabilities of the following garrison METOC equipment. The Apprentice METOC Analyst shall exhibit working knowledge of the operation of the garrison METOC equipment through practical application:

(1) Meteorological Integrated Data Display System (MIDDS).
(2) Lightning Position and tracking system (LPATS).
(3) Pilot to Forecaster Radio (METRO).
(4) Doppler radar system (WSR88D).
(5) Wet Bulb Globe Temperature Index Sensors (WBGTI).
(6) Tower to metro displays/communications (WXVISION).
(7) Hand Held equipment (PMQ-3, sling psychrometer, etc.).

Performance Standard. The Apprentice METOC Analyst shall be evaluated (verbally or written) on the first portion of the requirement. The Apprentice METOC Analyst shall exhibit working knowledge of through practical application to a proficiency level allowing for unsupervised operation without violating system integrity or procedures.

Prerequisite. All FAM events.

JCP-125 3.0 Z,R E N/A L

Goal. To certify knowledge of METOC software applications.

Requirement. Without the aid of references, define and discuss the performance capability and mission supported by the METOC application and the generated products. The Apprentice METOC Analyst shall operate each suite to exhibit working proficiency of knowledge:

(1) GFMPL.
(2) TAWS.
(3) AREPS.
(4) MIDDS.
(5) METCAST.
(6) JMV.

Performance Standard. The Apprentice METOC Analyst will be tested, written or oral on the basic knowledge of the software applications listed. The Apprentice METOC Analyst will be tested on the application of knowledge through practical application. During the practical application portion, the Apprentice METOC Analyst shall not violate system or software integrity.

Prerequisite. All FAM events.

JCP-126 5.0 Z,R E N/A L

Goal. To certify knowledge of atmospheric fundamentals.

Requirement. The Apprentice METOC Analyst shall verbally define and discuss the atmospheric fundamentals listed below during a technical discussion with qualified Journeyman METOC Analysts, Master METOC Analysts and/or METOC Chief:

(1) Long/short wave trough/ridges.
    (a) Deepening/building/intensifying.
    (b) Filling/weakening.
    (c) Cyclogenesis/frontogenesis.
    (d) Cyclolysis/frontolysis.
(2) Pressure systems.
    (a) Baroclinic/barotropic.
    (b) Warm/cold air advection.
    (c) Dry/moist air advection.
(3) Frontal systems.
    (a) Active/inactive cold fronts.
    (b) Active/inactive warm fronts.
    (c) Stationary fronts.
    (d) Warm/Cold occlusions.
    (e) Type “A”/”B” occlusions.
(4) Jet features.
    (a) Polar front jet stream.
    (b) Subtropical jet stream.
    (c) Conduction/radiation/advection/convection.
(5) Vorticity.
(6) Thickness.
(7) Condensation/evaporation/sublimation.
(8) Convergence/confluence.
(9) Divergence/diffluence.
(10) Types of baroclinic/barotropic low-pressure systems.
(11) Types of baroclinic/barotropic high-pressure systems.
(12) Gradient wind.
(13) Geostrophic wind.
(14) Relative/absolute/specific humidity.
(15) Pressure gradient.
(16) Cloud identification/formation.

Performance Standard. The Apprentice METOC Analyst shall discuss 10 topics assigned by the METOC Analyst Instructor from the topics listed in the requirement and respond to questions posed.

Prerequisite. All FAM events.

JCP-127 6.0 Z,R E N/A L

Goal. To certify knowledge of analyzing and interpreting upper atmospheric weather charts.

Requirement. Given reference materials, the Apprentice METOC Analyst shall analyze and interpret the 925/850/700/500/300/250/200 mb constant pressure charts for the features listed without violating data and analyzation rules within 6 hours, to exhibit application of upper atmospheric dynamics and physics:

(1) Isoheights.
(2) Isotherms.
(3) Areas of significant moisture.
(4) Major short wave axis, troughs and ridges.
(5) Minor short wave axis, troughs and ridges.
(6) High and low height centers.
(7) Warm and cold pockets.
(8) Upper fronts (where applicable).

Performance Standard. Upon completion of analysis, the Apprentice METOC Analyst will be required to discuss meteorological reasoning for placement of features until confidence in knowledge is achieved.

Prerequisite. All FAM events.

JCP-128 1.0 Z,R E N/A L

Goal. To certify knowledge of analyzing and interpreting a surface pressure chart.

Requirement. When given a surface chart, the Apprentice METOC Analyst shall apply analytical techniques and depict the features listed. The Apprentice METOC Analyst will be required to discuss meteorological reasoning for placement of features:

(1) Isobars.
(2) High and low pressure centers.
(3) Fronts.
(4) Highlight weather symbols.
(5) Troughs.
(6) Label air masses.
(7) Dry lines.
(8) Isallobars.
(9) Isodrosotherms.
(10) Identify outflow boundaries.

Performance Standard. The Apprentice METOC Analyst must complete the requirement within 45 minutes and without violating meteorological theories. The Apprentice METOC Analyst will be required to discuss meteorological reasoning for placement of features without violating fundamental of meteorological theories.

Prerequisite. All FAM events.

JCP-129	.5	Z,R	E	N/A	L

Goal. To certify knowledge of analyzing and interpreting a thickness chart.

Requirement. The Apprentice METOC Analyst when given a thickness chart, shall apply analytical techniques and depict the features listed. The Apprentice METOC Analyst will be required to discuss meteorological reasoning for placement of features:

(1) Warm/cold air advection.
(2) High and low pressure centers.
(3) Fronts.
(4) 540 Dam line.
(5) Troughs.
(6) Label air masses.
(7) Jet stream.

Performance Standard. The Apprentice METOC Analyst must complete the requirement within 30 minutes and without violating meteorological theories. The Apprentice METOC Analyst will be required to discuss meteorological reasoning for placement of features without violating fundamental of meteorological theories.

Prerequisite. All FAM events.

JCP-130	.5	Z,R	E	N/A	L

Goal. To certify knowledge of analyzing and interpreting a vorticity chart.

Requirement. When given a vorticity chart, apply analytical techniques and depict the features listed. The Apprentice METOC Analyst will be required to discuss meteorological reasoning for placement of features:

(1) Positive/negative vorticity areas.
(2) Shear lobes.
(3) Advection lobes.
(4) Vorticity lobes.
(5) X-N distribution.
(6) Jet stream.
(7) UVM/DVM.

Performance Standard. The Apprentice METOC Analyst shall complete the requirement within 30 minutes and without violating meteorological theories. The Apprentice METOC Analyst will be required to discuss meteorological reasoning for placement of features without violating fundamental of meteorological theories.

Prerequisite. All FAM events.

JCP-131 .5 Z,R E N/A L

Goal. To certify knowledge of analyzing and interpreting satellite imagery.

Requirement. When given satellite imagery, determine and state the type of satellite imagery, apply analytical techniques and depict the features listed. The Apprentice METOC Analyst shall be required to discuss meteorological reasoning for placement of features:

(1) Jet streams.
    (a) Location of jet streams.
    (b) Type of jet streams.
(2) High and low circulation center locations.
(3) Cloud types.
(4) Frontal systems, troughs and ridges.
(5) Land/terrain features.
(6) Significant weather phenomena.
    (a) Thunderstorms.
    (b) Squall lines.
(7) Tropical features.
    (a) Tropical cyclones.
    (b) Tropical upper tropospheric troughs

Performance Standard. The Apprentice METOC Analyst shall complete the requirement within 30 minutes and without violating meteorological theories.

Prerequisite. All FAM events.

JCP-132 3.0 Z,R E N/A L

Goal. To certify knowledge of analyzing and interpreting Doppler radar imagery.

Requirement. When given Doppler radar imagery, determine and state the type of radar data and identify meteorological features on the products listed. The Apprentice METOC Analyst will be required to discuss meteorological reasoning for placement of features:

(1) Base reflectivity products.
    (a) Bow echoes.
    (b) Potential thunderstorm features.
    (c) Outflow boundaries.
    (d) Circulation induced boundaries.
(2) Base velocity products.
    (a) Outflow patterns.
    (b) Regions of shear.
    (c) Circulation patterns.
(3) Base spectrum width products.
(4) Derived products.

Performance Standard. The Apprentice METOC Analyst must complete the requirement and without violating meteorological theories and technically discuss the type of radar imagery and the reasoning for feature identified.

Prerequisite. All FAM events.

JCP-133 1.0 Z,R E N/A L

Goal. To certify knowledge of conducting streamline analysis.

Requirement. When given a wind chart, conduct a streamline analysis denoting the features listed. The Apprentice METOC Analyst will be required to discuss meteorological reasoning for placement of features:

(1) Streamlines.
(2) Asymptotes (convergent/divergent).
(3) Neutral points.
(4) Label cyclonic and anti-cyclonic centers.
(5) Isotachs.
(6) Wind maximums and minimums.

Performance Standard. The Apprentice METOC Analyst must complete the requirement within 1 hour and without violating meteorological theories.

Prerequisite. All FAM events.

JCP-134 2.0 Z,R E N/A L

Goal. To certify knowledge of analyzing and forecasting atmospheric conditions from the SKEW T LOG P Diagram.

Requirement. Analyze a SKEW T LOG P diagram for elements listed. The Apprentice METOC Analyst must be able to discuss how the analyzed elements are applicable to current and forecasted weather phenomenon:

(1) Compute indices.
    (a) Lifted index.
    (b) KI index.
    (c) Sweat index.
    (d) Showalter’s index.
    (e) Total totals.
(2) Analyze negative/positive energy areas.
(3) Analyze for equilibrium levels.
(4) Compute turbulent areas.
(5) Compute tops of convective activity.
(6) Compute contrails.
(7) Compute icing types and levels.
(8) Compute maximum and minimum temperatures.
(9) Compute hail.
(10) Compute thunderstorm gusts.
(11) Analyze freezing level.
(12) Analyze for areas of moisture.
(13) Compute D-Values.
(14) Compute relative humidity.

Performance Standard. The Apprentice METOC Analyst must analyze a SKEW T LOG P diagram for the elements listed above and state how the derived values/elements apply to forecasting. Evaluation can be written, verbal or practical application.

Prerequisite. All FAM events.

JCP-135 .5 Z,R E N/A L

Goal. To certify knowledge of applied meteorological reasoning in the forecasting of movement and intensity of synoptic scale features.

Requirement. When given required charts, forecast intensity and movement of features listed and provide meteorological justification for forecast:

(1) Forecast movement and intensity changes in major short wave troughs/ridges.
(2) Forecast movement and intensity in upper level high and low pressure system.
(3) Forecast isotherms in major short wave features.
(4) Forecast moisture in major short wave features.
(5) Forecast movement and intensity in minor short waves.
(6) Forecast cyclogenesis of baroclinic low-pressure systems.
(7) Forecast cyclolosis of baroclinic low-pressure systems.
(8) Forecast anticyclogenesis of baroclinic high-pressure systems.
(9) Forecast anticyclolosis of baroclinic high-pressure systems.
(10) Forecast movement and intensity changes in surface pressure systems.
(11) Forecast movement and intensity changes in surface frontal systems.
(12) Forecast synoptic scale precipitation.
(13) Forecast long wave patterns.
(14) Forecast movement of jet maxes.

Performance Standard. When given required charts and in evaluated by a qualified METOC instructor, forecast intensity and movement of features listed in the requirement and provide meteorological justification for the derived forecast.

Prerequisite. All FAM events.

JCP-136 .5 Z,R E N/A L

Goal. To certify knowledge of forecasting severe weather.

Requirement. When given required charts, the Apprentice METOC Analyst shall analyze and forecast for severe weather elements listed and provide meteorological reasoning for each:

(1) Vertical and horizontal wind shear gradients.
(2) Severe icing.
(3) Severe/extreme turbulence.
(4) Tornadic activity.
(5) Thunderstorm activity.
(6) Tropical systems.
(7) Winter storms.

Performance Standard. Derive forecast and reasoning must be in accordance with references. Live evaluation shall be conducted under the direct supervision of a qualified METOC instructor. Forecast shall be completed in such a manner to allow for earliest warning of all destructive weather phenomena.

Prerequisite. All FAM events.

JCP-137 3.0 Z,R E N/A L

Goal. To certify briefing of METOC features from (re)analyzed products.

Requirement. Utilizing Appendix E, analyze and brief (formally or informally) atmospheric dynamic fundamentals depicted on the following products:

(1) Synoptic weather charts.
(2) Thickness charts.
(3) Vorticity charts.
(4) Constant pressure charts.
(5) Tropical cyclone warning displays.
(6) SKEW T LOG P diagrams.
(7) Streamline charts.
(8) Satellite imagery:
    (a) Infrared.
    (b) Visual.
    (c) Water vapor.
(9) Radar imagery:
    (a) Base reflectivity.
    (b) Base velocity.
    (c) Composite reflectivity.

Performance Standard. Training and preparation of briefing, shall be conducted under the mentoring of the METOC instructor. Brief shall be presented to Qualified Journeyman and Master METOC Analysts prior to qualification events. The Apprentice METOC Analyst must meet the requirement , in a period of 3 hours.

Prerequisite. All FAM events.

JCP-138 16.0 Z,R E N/A L

Goal. To certify knowledge of the content and development of correspondence that relates to METOC operations.

Requirement. Through practical application, the Apprentice METOC Analyst shall exhibit knowledge of content and techniques of composition for the messages listed:

(1) Casualty Reports (CASREP).
(2) Weather Forecast (WEAX).
(3) Joint Operational Area Forecast (JOAF).
(4) Tactical Atmospheric Summary (TAS).
(5) Assault Forecast (ASLTFCST).
(6) Amphibious Objective Area Forecast (AOAFCST).
(7) Strike Forecast (STRKFCST).
(8) Chemical Downwind Message (CDM).

Performance Standard. Message must be in compliance with references.

Prerequisite. All FAM events.

JCP-139 2.5 Z,R E N/A L

Goal. To certify knowledge of Terminal Aerodrome Forecast (TAF) content and format.

Requirement. In accordance with the references and utilizing local, regional and global meteorological models, assess the current and forecast meteorological elements and prepare a TAF. The Apprentice METOC Analyst must, at a minimum, complete the following tasks:

(1) Minimum altimeter setting.
(2) Cloud types, amounts and layer heights.
(3) Precipitation types.
(4) Surface visibility.
(5) Weather and obstruction to visibility.
(6) Maximum/minimum temperatures.
(7) Wind Speed, direction and character.
(8) Icing type, height, and intensity.
(9) Turbulence type, height, and intensity.
(10) Encode forecast meteorological elements in accordance with reference.

Performance Standard. MAI will ensure 50% of the TAFS are for a location other than their current location. The Apprentice METOC Analyst must complete the requirement a minimum of 25 times and be in accordance with references.

Prerequisite. All FAM events.

JCP-140 5.0 Z,R E N/A L

Goal. To certify knowledge of weather warnings.

Requirement. In accordance with references and local procedures, assess and forecast conditions phenomenon requiring generation of the listed weather warnings. The Apprentice METOC Analyst shall generate (live or simulated) each warning 5 times:

(1) Thunderstorm warnings.
(2) Severe thunderstorm warnings/watches.
(3) Tornado warnings/watches.
(4) Wind warnings.
(5) Storm warning.
(6) Gale/Whole gale warning.
(7) Flood warning.
(8) Flash flood warning.
(9) Freeze/Hard freeze warning.
(10) Small craft warnings/advisories.
(11) Lightning warnings.

Performance Standard. The Apprentice METOC Analyst will generate the warnings listed (either simulated or live) in accordance with the references. Live completion of the event shall be monitored and supervised by the METOC instructor to ensure accuracy and safety.

Prerequisite. All FAM events.

JCP-141 4.0 Z,R E N/A L

Goal. To certify knowledge of flight weather briefing.

Requirement. When given a DD175 or like flight weather request, graphic METOC products, alphanumeric meteorological products, appropriate software and hardware, and knowledge of forecasting rules and theories, prepare a minimum of 20 flight weather briefings and 5 VFR Stamp flight weather briefings. For each brief the Apprentice METOC Analyst will complete the following steps:

(1) Evaluate current atmospheric parameters along the flight path.
(2) Forecast the following atmospheric impacts along the flight path.
    (a) Turbulence.
    (b) Icing.
    (c) Thunderstorm activity.
    (d) Flight visibility.
    (e) Flight level winds and temperature.
(3) Forecast the following meteorological conditions at destination(s) and alternate(s).
    (a) Sky conditions.
    (b) Visibility.
    (c) Type and character of precipitation or obstruction to visibility.
    (d) Wind direction.
    (e) Wind speed (within 5 knots of actual conditions).
    (f) Altimeter setting.

Performance Standard. Requirement must be meet within 10 minutes of receipt and be in accordance with orders and directives. Specific criteria for content are:

(1) Sky conditions (within 500 feet of actual arrival conditions).
(2) Visibility (within 1 mile of the actual arrival conditions).
(3) Type and character of precipitation or obstruction to visibility.
(4) Wind direction (within 30 degrees if wind speed greater than six knots of actual arrival conditions).
(5) Wind speed (within 5 knots of actual conditions).
(6) Altimeter setting (within 2 in. of mercury of actual arrival conditions).

Prerequisite. All FAM events.

JCP-142 10 Z,R E N/A L

Goal. To certify knowledge of flight weather packets.

Requirement. Given a flight weather packet request, prepare and brief a flight weather packet. Flight weather packet shall include the following products:

(1) Construct a horizontal weather depiction.
(2) Construct a ditch-heading chart.
(3) Construct an altimeter setting chart.
(4) Construct an upper-level wind chart.

(5) Construct a sea surface temperature chart.
(6) Prepare DD175-1 flight weather brief.
(7) Prepare an OPNAV 3140/25 flight forecast folder.
(8) Include mission essential products as applicable.

Performance Standard. Flight weather packet must be in accordance with the references, be completed within 2 hours, and be accomplished a minimum of 5 times.

Prerequisite. All FAM events.

JCP-143 2.0 Z,R E N/A L

Goal. To certify knowledge of verifying meteorological model output.

Requirement. Through practical application, the Apprentice METOC Analyst will verify meteorological model output by identifying strengths and weaknesses of each of the following numerical models:

(1) NOGAPS.
(2) COAMPS.
(3) MM5.
(4) AVN.
(5) ETA.

Performance Standard. Through practical application, verify model output with 12/24/36/48 analyses. The Apprentice METOC Analyst must demonstrate knowledge of each global and mesoscale numerical model in the requirement.

Prerequisite. All FAM events.

JCP-144 5.0 Z,R E N/A L

Goal. To certify knowledge of surf forecasting.

Requirement. Given the appropriate software, generate a surf forecast that contains the listed components in accordance with the references:

(1) Significant breaker height.
(2) Maximum breaker height.
(3) Breaker period.
(4) Breaker type.
(5) Breaker angle.
(6) Littoral current speed and direction.
(7) Modified surf index.
(8) Wind direction in surf zone.
(9) Obtain beach profile data.

Performance Standard. Surf forecast must be in accordance with the references and be completed, within the standards a minimum of 5 times.

Prerequisite. All FAM events.

JCP-145	.5	Z,R	E	N/A	L

Goal. To certify knowledge of limited data forecasting.

Requirement. Given 3 METOC products, selected by the MIA, and a location, write a plain language forecast for a period of 48 hours and verify for accuracy.

Performance Standard. Content and verification of forecasted elements are subjective. MIA will determine satisfactory completion of event.

Prerequisite. All FAM events.

JCP-146	30	Z,R	E	N/A	L

Goal. To certify knowledge of generation of specialized mission support products in response to Request For Information (RFI).

Requirement. Given a RFI, develop the required specialized forecast product to fulfill RFI requirement:

(1) WEAX.
(2) JOAF.
(3) EOTDA.
(4) TAWS.
(5) METOC Impacts to operations.
(6) Tactical atmospheric summaries.
(7) EM propagation summaries.
(8) Amphibious assault forecasts.
(9) Strike forecasts.
(10) Assault forecasts.
(11) Climatology.
(12) Environmental support packages.
(13) Tidal products.
(14) Solar/ Lunar products.
(15) Search and rescue brief.

Performance Standard. Must fulfill a request for information for each of the listed product to successfully complete the event. Content and verification of forecasted elements are subjective. MIA will determine satisfactory completion of event.

Prerequisite. All FAM events.

JCP-147	8.0	Z,R	E	N/A	L

Goal. To certify knowledge of tailored METOC weather briefs.

Requirement. Develop and conduct the specialized/tailored weather briefs listed:

(1) Tropical cyclone brief.
(2) Climatology brief.
(3) Astronomical/lunar brief.
(4) Instrument Ground School (IGS) brief.

Performance Standard. The Apprentice METOC Analyst must develop and conduct each brief once. Development time for each brief is one week. Content and verification of forecasted elements are subjective. MIA will determine satisfactory completion of event.

Prerequisite. All FAM events.

JCP-148	2.0	Z,R	E	N/A	L

Goal. To certify knowledge of basic network administration functions.

Requirement. Utilizing an established METOC network and be able to perform the following basic network functions in order to identify, safeguard and maintain network integrity:

(1) Log on to the network.
(2) Connect to other computers on the network.
(3) Transfer data to other computers on the network.
(4) Use shared folders and files.
(5) Monitor access to/from the network and identify possible intrusions/problems.
(6) When directed, add computers to the network.

Performance Standard. The Apprentice METOC Analyst shall complete the requirement without compromising the integrity of the network or data.

Prerequisite. All FAM events.

3. Consolidated METOC Operations (CMO)

a. Purpose. To enhance proficiency in garrison METOC support operations and products.

b. General. This stage of the syllabus shall be completed at the first operational METOC units assigned and when assigned to the refresher syllabus. Execution of this stage shall adhere to the following:

(1) Initial training shall be conducted under the mentorship of a qualified Journeyman METOC Analyst until student attains qualification.

(2) Refresher training shall be conducted locally under the supervision and evaluation by a qualified Master METOC Analyst.

c. Crew Requirements

(1) Qualified instructor.

(2) Apprentice METOC Analyst assigned to syllabus.

d. Academic Training

(1) General. Academic training will be conducted prior to and concurrently with required events.

(2) Local training. Local METOC units shall establish and utilize periods of instruction to facilitate training. The periods of instruction

shall be developed and approved by the METOC OIC or METOC Chief with particular attention to content and validity.

e. Event Training

CMO-149	1.5	Z,R	E	N/A	L

Goal. Operate garrison METOC equipment to provide METOC support to base operations.

Requirement. The Apprentice METOC Analyst shall operate and conduct operator level maintenance and troubleshooting of the following METOC systems:

(1) Meteorological Integrated Data Display System (MIDDS).
(2) Lightning Position and Tracking System (LPATS).
(3) Pilot to Forecaster Radio (METRO).
(4) Doppler radar system (WSR88D).
(5) Wet Bulb Globe Temperature Index sensors (WBGTI).
(6) Tower to metro displays/communications (WXVISION).
(7) Handheld equipment. (PMQ-3, psychrometers).

Performance Standard. SNM will be evaluated through practical application and verbally. Refresher training is conducted monthly.

Prerequisite. None.

CMO-150	24	Z,R	E	N/A	L

Goal. Conduct garrison METOC support.

Requirement. Conduct routine METOC operations in support of garrison activities. Personnel assigned will:

(1) Conduct watch operations.
(2) Conduct flight weather briefings.
(3) Generate aviation weather products. (TAF, Daily Forecast, route forecasts, etc.)
(4) Conduct tropical weather forecasting.
(5) Conduct special mission support product development.
(6) Conduct security operations.
(7) Conduct warning and advisories functions.
(8) Conduct surf forecasting (if applicable)
(9) Conduct METOC system operations.
(10) Conduct basic METOC system and network functions.

Performance Standard. Personnel assigned shall complete the requirement under the supervision of a qualified Journeyman METOC Analyst until completion of the certification phase. Refresher training standard requires completion of the tasks for one week semiannually.

Prerequisite. None.

232. COMBAT READY TRAINING

1. Familiarization (FAM)

a. Purpose. To introduce the Journeyman METOC Analyst to core plus skills and knowledge.

b. General

(1) Administrative Notes. Familiarization training shall be conducted by the METOC Analyst Instructor (MAI).

(2) Prerequisites

(a) Completion of the Combat Capable stage of training.

(b) Top Secret clearance.

(c) Assignment to syllabus.

(3) Refresher Training. Refresher events shall be completed annually and when assigned by the METOC Chief.

(4) Stage end performance. Upon completion of this stage of the syllabus the Journeyman METOC Analyst shall have been exposed to the all core skills required in forecasting and assessing METOC impacts to operations. Proficiency will be developed in follow on stages of training.

c. Crew Requirements. Journeyman METOC Analyst and qualified METOC Analyst Instructor.

d. Academic Training. Academic training events are graded and tracked at the administering unit. Supplemental training events and training packages are highly encouraged.

e. Event Training

FAM-200	1.0	Z	E	N/A	L

Goal. Familiarization with MAGTF operations.

Requirement. In accordance with references, Journeyman METOC Analyst shall identify the roles and missions of each element of the MAGTF:

(1) Air Combat Element (ACE).
(2) Ground Combat Element (GCE).
(3) Command Element (CE).
(4) Combat Service Support Element (CSSE).
(5) Bases and stations.
(6) Supporting Establishment Element (SSE).

Performance Standard. Stated roles and missions shall be in accordance with references.

Prerequisite. None.

FAM-201 1.0 Z E N/A L

Goal. Familiarization with the components and capabilities of the Meteorological Mobile Facility Replacement (METMF(R)).

Requirement. Visually and verbally identify each component of the subsystems within the MetMF(R) and briefly discuss the capabilities listed:

(1) Shelter Subsystem (SSS).
    (a) Shelter.
    (b) ECU.
    (c) Door mounted safety equipment.
    (d) Power distribution unit.
(2) Processing Subsystem (PCS).
    (a) WINNT domain.
    (b) UNIX operating systems.
    (c) Connectivity Devices/cryptologic devices.
(3) Meteorological Radar System (MRS).
    (a) Nomenclature.
    (b) Max ranges.
    (c) Frequency and power.
    (d) Operating system.
    (e) System software.
    (f) Basic outputs.
(4) Meteorological Satellite Subsystem (MSS).
    (a) Nomenclature.
    (b) Frequencies.
    (c) Encryption.
    (d) Antenna array.
    (e) Receiver.
    (f) Operating system.
    (g) System software.
    (h) Basic outputs.
(5) Communications Subsystem (CSS).
    (a) Nomenclature.
    (b) Connectivity/ Crypto logic devices.
    (c) Antenna arrays.
(6) Portable Meteorological Subsystem (PMS).
    (a) Nomenclatures.
    (b) Connectivity.
    (c) Receivers.
(7) Local Sensor Subsystem (LSS).
    (a) Nomenclature.
    (b) Operating system.
    (c) System software.
    (d) Operating ranges.
(8) Remote Sensor Subsystem (RSS).
    (a) Nomenclature.
    (b) Operating system.
    (c) Software.
    (d) Operating ranges.
    (e) Connectivity.
(9) Rawinsonde subsystem (RWS).
    (a) Nomenclature.
    (b) Connectivity.

(c) Frequencies.
(d) Antenna arrays.
(10) Video Subsystem (VSS).
(a) Nomenclature.
(b) Connectivity.

Performance Standard. Without error, visually identify each component of the subsystems within the MetMF(R) and briefly discuss the capabilities of each.

Prerequisite. None.

FAM-202 .5 Z E N/A L

Goal. Familiarization with the components and capabilities of the Navy Integrated Tactical Environment System (NITES IV).

Requirement. Visually or verbally identify each component of the NITES and briefly discuss the capabilities each:

(1) Main module.
(2) Communications module.
(3) Satellite module.
(4) Sensors and antennas.
(5) Network components.
(6) Communication components.

Performance Standard. Without error, visually identify each component and state the capabilities of each.

Prerequisite. None.

FAM-203 3.0 Z E N/A L

Goal. Familiarization with the knowledge of configuring METOC applicable software.

Requirement. Utilizing applicable references, demonstrate knowledge of software configuration by establishing connectivity and retrieving METOC data. Journeyman METOC Analyst will configure software to receive, develop and/or manipulate the following items:

(1) Alphanumeric data.
(2) Graphic data.
(3) Tactical decision aid products.
(4) Flight level winds and routing products.
(5) Flight weather briefing products.
(6) Satellite imagery.
(7) Radar imagery.
(8) Classified products.
(9) Regional and global center products.

Performance Standard. Journeyman METOC Analyst shall successfully complete the task without violating system or network integrity or data.

Prerequisite. None.

FAM-204 1.0 Z E N/A L

Goal. Familiarization with the knowledge required for assessing the impacts of meteorological and oceanographic elements on MAGTF operations.

Requirement. Journeyman METOC Analyst will be required to identify what overall missions (Air, Ground, and Sea) will be impacted by the listed meteorological and oceanographic phenomenon:

(1) Thunderstorm activity.
(2) Visibility.
(3) Rainfall.
(4) Snow.
(5) Winds.
(6) Humidity.
(7) Pressure.
(8) Waves height.
(9) Tides.
(10) Solar elements.
(11) Lunar elements.
(12) Sky coverage.

Performance Standard. With aid of reference, correctly identify mission area impacted by each phenomenon listed.

Prerequisite. None.

FAM-205 6.0 Z E N/A L

Goal. Familiarization with Equipment Casualty reporting.

Requirement. In accordance with the NAVMETOCCOMINST 13950.1, the Journeyman METOC Analyst will be required to draft a minimum of 3 each of the equipment report messages listed:

(1) Casualty report.
(2) Casualty update.
(3) Casualty correct.

Performance Standard. Draft message must meet requirements for content and format per references.

Prerequisite. None.

FAM-206 6.0 Z E N/A L

Goal. Familiarization with METOC logistics and external support requirements.

Requirement. Through practical application, the Journeyman METOC Analyst shall exhibit knowledge of the listed logistical and external support programs and requirements:

(1) Hazardous materials (HAZMAT).
(2) Marine Aviation Logistics Support (MALS) structure.
(3) NALCOMIS.
(4) Mobile facility lift and transportation requirements.

(5) Time Phased Force Deployment Data (TPFDD).
(6) Equipment Density Lists (EDL).

Performance Standard. Performance shall be trained and evaluated by the METOC analyst instructor. Practical application must be in accordance with orders and regulations governing the logistical support program(s).

Prerequisite. None.

FAM-207 2.0 Z E N/A L

Goal. Familiarization with deployment requirements and procedures.

Requirement. When given a simulated METOC deployment letter of instruction (LOI), the Journeyman METOC Analyst shall demonstrate the skills, either verbally or simulated, required to perform the tasks in accordance with the LOI:

(1) Identify METMF(R) lift requirements.
(2) Identify tailored METOC support package equipment lift requirements.
(3) Identify personnel requirements to support the LOI.
(4) Ensure embark markings are correct.
(5) State personnel deployment readiness procedures.
(6) Identify equipment casualty reporting procedures.

Performance Standard. Task must be completed in accordance with the references.

Prerequisite. None.

FAM-208 .5 Z E N/A L

Goal. Familiarization with environmental impact briefings and reporting (when required).

Requirement. The Journeyman METOC Analyst will brief and, when required, develop the natural environmental products listed:

(1) Volcanic eruption.
(2) Tidal wave/tsunami.
(3) Avalanches.
(4) Earthquakes (reports).

Performance Standard. The Journeyman METOC Analyst shall identify the products (live or simulated) and brief a Master METOC Analyst on the product. Earthquake reports will be generated in accordance with the references.

Prerequisite. None.

FAM-209 2.0 Z E N/A L

Goal. Familiarization with oceanographic forecasting and impact assessment.

Requirement. The Journeyman METOC Analyst shall discuss products used for deriving forecasts for the oceanographic elements listed and assess the impacts on operations:

(1) Sea state.
(2) Tidal data.
(3) Breaker types and heights.
(4) Fetch areas.
(5) Swells.

Performance Standard. Impact assessment and products discussion shall be in accordance with the references.

Prerequisite. None.

FAM-210 2.0 Z E N/A L

Goal. Familiarization with METOC database functions.

Requirement. Under direction and supervision, the Journeyman METOC Analyst shall complete the tasks listed:

(1) Adhere to file naming convections.
(2) Identify user rights and accesses.
(3) Identify METOC database requirements (folders, directories).
(4) Create database folders and directories.
(5) Configure software to place data in database.
(6) Maintain number of files in the database.

Performance Standard. METOC database functions must be in accordance with the references and not violate network integrity or data.

Prerequisite. None.

FAM-211 1.0 Z E N/A L

Goal. Familiarization with products and sources for assessment of METOC impacts on MAGTF Operations.

Requirement. Given a mission, the Journeyman METOC Analyst shall state the sources and products required for assessing meteorological impacts to specified mission.

Performance Standard. The Journeyman METOC Analyst must correctly identify sources and products for assessing METOC impact.

Prerequisite. None.

FAM-212 2.0 Z E N/A L

Goal. Familiarization with utilizing tactical equipment for forecasting for tropical cyclone development and movement.

Requirement. Given METOC products (live or canned data), tactical METOC equipment and favorable conditions for tropical development, analyze for tropical cyclone development, movement, and intensity and compute a 96-hour prognostic for movement/intensity of the system:

(1) Modify computer generated tropical cyclone models and available centrally prepared products.
(2) Forecast tropical cyclone development, movement, and intensity using satellite data and other applicable products.
(3) Interpret METOC data parameters.
(4) Correlate centrally/locally prepared products for system intensification and movement.

Performance Standard. METOC instructor shall evaluate forecast for accuracy and verification.

Prerequisite. None.

2. Plans, Policies and Procedures (PPP)

a. Purpose. To enhance the Journeyman METOC Analyst's core skills and knowledge of METOC plans, policies and procedures through live, simulated and academic training.

b. General

(1) Administrative Notes. Training shall be conducted and evaluated by the METOC Analyst Instructor (MAI). Completion of events can only be approved by designating authority or delegated authority.

(2) Prerequisite

(a) Completion of the Combat Capable phase and level 200 familiarization training.

(b) Top secret clearance.

(c) Assignment to syllabus.

(3) Refresher Training. Refresher events shall be completed annually and when assigned by the METOC Chief.

(4) Stage end performance. Upon completion of this stage of the syllabus the Journeyman METOC Analyst shall have the established minimum proficiency in the plans, policies and procedures inherent to the METOC support structure.

c. Crew Requirements. Journeyman METOC Analyst and qualified METOC Analyst instructor.

d. Academic Training. Academic training events are graded and tracked at the administering unit. Supplemental training events and training packages are highly encouraged.

e. Event Training

PPP-213 1.0 Z E N/A L

Goal. Develop and supervise Tower Visibility Observer training curriculum and schedule.

Requirement. The Journeyman METOC Analyst shall complete the following tasks:

(1) The Journeyman METOC Analyst will develop a tower visibility observer program in accordance with directives.
(2) The Journeyman METOC Analyst will supervise implementation of the tower visibility observer program.
(3) The Journeyman METOC Analyst will submit completion and qualification recommendations to the qualifying authority.

Performance Standard. Training program must meet training requirements in accordance with references.

Prerequisite. None.

PPP-214 5.0 Z E N/A L

Goal. Supervise adherence and implementation of established METOC administrative programs, procedures and plans.

Requirement. When directed, the Journeyman METOC Analyst will exhibit knowledge of the implementation of METOC administrative programs. Completion of the tasks must be in accordance with references and local guidance. The Journeyman METOC Analyst will ensure the following administrative reports are completed and filed:

(1) Station Information File (SIF) report.
(2) Equipment and personnel readiness reports.
(3) Observational and forecasting data reports for climatology.
(4) Work requests.
(5) Annual Station Reports (ASR).
(6) Morning reports.
(7) Monthly stations reports.
(8) PIREPS.
(9) Command chronology reports
(10) Activity Based Costing reports (ABC)

Performance Standard. Reports must be in compliance with orders and directives.

Prerequisite. None.

PPP-215 3.0 Z E N/A L

Goal. Draft logistical support program(s) reports and documents.

Requirement. When directed, the Journeyman METOC Analyst shall draft METOC logistical support reports and documents pertaining to the following logistical programs:

(1) Supply.
(2) Equipment.
(3) Fiscal.

Performance Standard. Evaluator shall determine types of reports and documents to be drafted. Completed drafts must be in accordance with references and fulfill mission requirements.

Prerequisite. None.

PPP-216 1.0 Z E N/A L

Goal. Supervise and conduct of watch turnover procedures.

Requirement.

(1) The Journeyman METOC Analyst will supervise and guide the Apprentice METOC Analyst in turnover procedures.

(2) The Journeyman METOC Analyst will conduct the Journeyman METOC Analyst turnover procedures. Turnover will contain, at a minimum, the following elements:

(a) Personnel issues.
(b) Forecast reasoning.
(c) METOC impacts to applicable operations.
(d) Security.
(e) Special instructions.
(f) Qualification and designations achieved on watch.

Performance Standard. Must be in compliance with references and guidance.

Prerequisite. None.

PPP-217 8.0 Z E N/A L

Goal. Conduct watch procedures in accordance with orders and directives.

Requirement. The Journeyman METOC Analyst shall complete the following actions:

(1) The Journeyman METOC Analyst will supervise the Apprentice METOC analysts in the performance of their duties.
(2) The Journeyman METOC Analyst will conduct watch turnover procedures in accordance with establish procedures.
(3) Conduct security operations.
(4) Conduct METOC assessment.
(5) Conduct METOC product development procedures.

(6) The Journeyman METOC Analyst will identify personnel issues to the Master METOC analyst.

Performance Standard. Watch must function in accordance with references.

Prerequisite. None.

PPP-218 2.0 Z E N/A L

Goal. Conduct Quality Assurance (QA) on Apprentice METOC Analyst products.

Requirement. In accordance with QA program, the METOC Analyst shall complete the following tasks:

(1) Validate parameters of observed and forecasted products listed for format and accuracy:

(a) Observational elements.
(b) Forecast elements.
(c) PIREPs.
(d) WEAXs.
(e) Daily forecasts.
(f) Local derived mission required products.

(2) Advise the METOC Chief of problems and exceptional performance patterns highlighted by the QA program.
(3) The Journeyman METOC Analyst shall provide recommendations to enhance the quality assurance program.

Performance Standard. Must be completed in accordance with the QA references.

Prerequisite. None.

PPP-219 1.0 Z E N/A L

Goal. Mentor Apprentice METOC Analyst on MOS progression training.

Requirement. When assigned as a mentor to a Apprentice METOC Analyst, provide the training and mentoring on necessary knowledge/skills required to successfully complete the Meteorological Oceanographic Analyst Forecast (MOAF) course. Such skills include but are not limited to:

(1) Fundamentals of meteorology.
(2) Analyzation and interpretation of meteorological charts.
(3) Analyzation and interpretation of support charts.
(4) Briefing techniques.
(5) Fundamentals of METOC impacts to weapons systems.
(6) Fundamentals of intelligence process.

Performance Standard. Journeyman METOC Analyst shall evaluated by practical application and supervised by a qualified Master METOC Analyst.

Prerequisite. None.

PPP-220 56 Z E N/A L

Goal. Draft input to Annex H of operational orders.

Requirement. The Journeyman METOC Analyst shall draft and submit METOC input to the METOC Services Annex (Annex H) of operational orders and Letters Of Instruction (LOI).

Performance Standard. Draft METOC input must be in JOPES (or applicable format) and contain all required information to support designated mission and designate all external requirement for successful METOC support.

Prerequisite. None.

PPP-221 2.0 Z E N/A L

Goal. Implementation and supervision of established security procedures.

Requirement. In accordance with the references, the Journeyman METOC Analyst shall complete the listed tasks:

(1) Safeguard classified materials through supervision and adherence to established security procedures.
(2) Submit recommendation to improve security program to the METOC Chief.
(3) Assist subordinate personnel in the submission of security clearance/access requests.
(4) Conduct embarkation and handling of classified materials in accordance with established guidelines.
(5) Supervise the conduct of security checks.

Performance Standard. Procedures and supervision of the security program must be in compliance with references and local procedures. The refresh rate is monthly.

Prerequisite. None.

PPP-222 .5 Z E N/A L

Goal. Conduct and state security and classified materials storage and transportation procedures and requirements.

Requirement.

(1) The Journeyman METOC Analyst shall state and conduct the requirements and procedures for the storage of METOC specific equipment and software.
(2) The Journeyman METOC Analyst shall state and conduct the requirements for the transportation of METOC specific equipment and software.
(3) The Journeyman METOC Analyst shall state and conduct the logging of all movement and inventories increases and decreases per the references.
(4) State marking procedures for classified materials.

Performance Standard. Procedures and supervision of the security program must be in compliance with established references.

Prerequisite. None.

PPP-223	.5	Z	E	N/A	S/L

Goal. Conduct emergency destruction procedures.

Requirement. In a simulated environment, the Journeyman METOC Analyst shall state and then conduct the emergency destruction procedures per the governing directives and orders.

Performance Standard. Conduct of the emergency destruction must be in accordance with the references. The Refresh rate is annually.

Prerequisite. None.

3. Consolidated METOC Operations

a. Purpose. To enhance the knowledge and skills of the Journeyman METOC Analyst in METOC support operations.

b. General

(1) Administrative Notes. Training shall be conducted by the METOC Analyst Instructor (MAI).

(2) Prerequisite

(a) Completion of the Combat Capable stage of training.

(b) Top Secret clearance.

(c) Assignment to syllabus.

(3) Refresher Training. Refresher events shall be completed semi-annually and when assigned by the METOC Chief.

(4) Stage end performance. Upon completion of this stage of the syllabus the Journeyman METOC Analyst shall have a comprehensive knowledge of METOC support operations and can effectively provide METOC support to a majority of combat operations. Proficiency shall be obtained and sustained through refresher and repetitive application of attained knowledge and skills.

c. Crew Requirements. Journeyman METOC Analyst and qualified METOC Analyst Instructor.

d. Academic Training. Academic training events are graded and tracked at the administering unit. Supplemental training events and training packages are highly encouraged.

e. Event Training

CMO-224 32 Z E N/A L

Goal. Implement deployment requirements and procedures.

Requirement. Under the supervision of a Master METOC Analyst and when directed by the Master METOC Chief, the Journeyman METOC Analyst shall accomplish the following tasks:

(1) Plan a deployment of tactical METOC assets to a Forward Operating Base (FOB).
(2) Coordinate transportation of equipment (classified and unclassified) to designated area.
(3) Coordinate personnel transportation and billeting.
(4) Conduct personnel inspections.
(5) Coordinate network connectivity (where available).
(6) Coordinate logistical support.
(7) Execute plan.

Performance Standard. Personnel and equipment must arrive at the designated area and establish METOC support capabilities. The refresh rate is semi-annually.

Prerequisite. None.

CMO-225 240 Z,R E N/A L

Goal. Conduct tactical METOC support.

Requirement. Conduct tactical METOC operations in support of missions. Journeyman METOC Analyst will utilize tactical METOC equipment to complete the following tasks:

(1) Conduct watch operations.
(2) Conduct flight weather briefings.
(3) Conduct tropical weather forecasting.
(4) Conduct special mission support product development.
(5) Conduct security operations.
(6) Conduct warning and advisories functions.
(7) Conduct surf forecasting (if applicable).
(8) Conduct METOC system operations.
(9) Conduct basic METOC system and network functions.
(10 Conduct METOC impact assessment briefings.
(11) Conduct amphibious, air, and ground strike briefs.
(12) Conduct Common Operating Picture (COP) operations.

Performance Standard. Support must be in compliance with the QA program, orders, and directives and fulfill mission requirements.

Prerequisite. None.

CMO-226 16.0 Z E N/A L

Goal. Prepare correspondence in METOC support messages in a tactical environment.

Requirement. Utilizing tactical equipment, compose the listed correspondence listed in official message traffic format. Messages must contain all required elements:

(1) Casualty Reports (CASREP).
(2) Weather Forecast (WEAX).
(3) Joint Operational Area Forecast (JOAF).
(4) Tactical Atmospheric Summary (TAS).
(5) Assault Forecast (ASLTFCST).
(6) Amphibious Objective Area Forecast (AOAFCST).
(7) Strike Forecast (STRKFCST).
(8) Chemical Downwind Message (CDM).

Performance Standard. Journeyman METOC Analyst will compose listed messages in the proper format and content.

Prerequisite. None.

CMO-227 24.0 Z E N/A L

Goal. Conduct METOC operations in accordance with security regulations and orders.

Requirement. Given knowledge of the references, conduct routine METOC operations while adhering to security procedures in accordance with references:

(1) Ensure safeguarding procedures of classified METOC products are adhered to.
(2) Obtain classified materials courier cards as required.
(3) Ensure two person integrity is adhered to as applicable.
(4) Log entries on classified materials custody cards whenever classified METOC materials leave storage containers.
(5) Log visitors into access logbook when required.
(6) Safeguard combinations and passwords to classified materials.

Performance Standard. Requirement must be completed in accordance with references.

Prerequisite. None.

CMO-228 2.0 Z,R E N/A L

Goal. Forecast meteorological events using limited data in a tactical environment.

Requirement. Utilizing tactical METOC equipment and two of the three products listed, create a plain language and aviation forecast valid for a 96 hour period. The JMA shall state meteorological reasoning to include land/sea interfaces and terrain influences:

(1) Satellite image.

(2) Skew-T Log P diagram.
(3) Surface chart.

Performance Standard. Evaluation is subjective and shall be evaluated by the METOC chief.

Prerequisite. None.

CMO-229 30.0 Z,R E N/A L

Goal. Generate Specialized Mission Support Products in response to Request For Information (RFI) in a tactical environment.

Requirement. Utilizing tactical METOC equipment and given a RFI, develop the required specialized forecast product to fulfill RFI requirement for a region selected by the METOC instructor:

(1) WEAX.
(2) JOAF.
(3) EOTDA.
(4) TAWS.
(5) METOC impacts to operations.
(6) Tactical atmospheric summaries.
(7) EM propagation summaries.
(8) Amphibious assault forecasts.
(9) Strike forecasts.
(10) Assault forecasts.
(11) Climatology.
(12) Environmental support packages.
(13) Tidal products.
(14) Solar/ Lunar products.
(15) Search and rescue brief.

Performance Standard. Must complete an RFI for each product listed until product content and format are correct.

Prerequisite. None.

CMO-230 6.0 Z E N/A L

Goal. Develop tailored METOC weather briefs in a tactical environment.

Requirement. Utilizing tactical METOC equipment and knowledge of the necessary references, develop and conduct specialized/tailored each of the following METOC weather briefs:

(1) Tropical cyclone brief.
(2) Climatology brief.
(3) Astronomical/Lunar brief.

Performance Standard. Must complete each brief listed until product content, format and briefing confidence is achieved.

Prerequisite. None.

CMO-231 1.0 Z E N/A L

Goal. Forecast and brief tropical cyclone development and movement using tactical equipment.

Requirement. Utilizing tactical equipment, METOC products (live or canned data) and under conditions for tropical development analyze for tropical cyclone development, movement, and intensity and compute a 96-hour prognostic for movement/intensity of the system:

(1) Interpret cyclone warnings and advisories.
(2) Modify computer generated tropical cyclone models and available centrally prepared products based on climatological summaries of cyclone storm tracks, forecasting rules, and local area requirements.
(3) Forecast tropical cyclone development, movement, and intensity using satellite data and other applicable products.
(4) Interpret METOC data parameters.
(5) Prepare and brief
   (a) Recommendation to cyclone conditions of readiness.
   (b) Cyclone categories.
   (c) Impacts to cyclone evacuation plan.
   (d) Impacts based on cyclone storm surge forecasts.

Performance Standard. The requirements must be met in accordance with the reference. Repetition of tasks shall be carried out until accuracy in content and format are correct as determined by the METOC Analyst Instructor.

Prerequisite. None.

CMO-232 .5 Z,R E N/A L

Goal. Create a surf forecast using tactical equipment.

Requirement. Utilizing tactical equipment, the appropriate software and requirements for the operations, generate a surf forecast that contains the listed components:

(1) Obtain beach survey.
(2) Significant breaker height.
(3) Maximum breaker height.
(4) Breaker period.
(5) Breaker type.
(6) Breaker angle.
(7) Littoral current speed and direction.
(8) Modified surf index.
(9) Wind direction in surf zone.
(10) Obtain beach profile data.

Performance Standard. Forecast must meet mission requirement and contain the listed elements. Forecast shall be repeated until accuracy in content and format are achieved. Completion shall not be awarded until confidence in the processes and procedures utilized to develop and brief surf forecasts are achieved as determined by the MAI.

Prerequisite. None.

CMO-233 40.0 Z E N/A L

Goal. Conduct a climatology brief using tactical equipment.

Requirement. Utilizing tactical equipment and research, prepare and conduct a 3-month climatology brief which includes the listed items:

(1) Overview.
(2) Geography.
(3) Terrain.
(4) Operational interests, if applicable:
(5) Oceanography.
(6) Astronomical.
(7) Seismic activity.
(8) Historical EM conditions.
(9) General climate.
(10) Specific weather elements, if applicable:
    (a) Relative humidity.
    (b) Thunderstorms/precipitation.
    (c) Prevailing winds.
    (d) Sky condition.
    (e) IFR/VFR/Marginal VFR percentages.
    (f) Assessments and recommendations.

Performance Standard. Brief must be in accordance with orders and directives for a location specified by the METOC analyst instructor, and completed within 1 week of assignment.

Prerequisite. None.

CMO-234 6.0 Z E N/A L

Goal. Prepare and disseminate a deployment brief.

Requirement. Utilizing RFI (simulated or real time), prepare and conduct a mission specific deployment brief. Brief shall include the listed items:

(1) Basic forecasted meteorological parameters.
(2) Surface observation and TAF.
(3) Flight weather products.
(4) Types of severe weather warnings and advisories.
(5) Available and/or applicable METOC software.
(6) NATOPS requirements.
(7) METOC support capabilities.
(8) Climatological impact assessment.
(9) Type of terrain in area of interest and influence to METOC parameters.

Performance Standard. In accordance with all references and within one week the brief shall be completed. Requirement will be fulfilled once utilizing garrison equipment and once using tactical equipment for two distinctly separate geographic locations (location must be different from local area).

Prerequisite. None.

CMO-235	24.0	Z	E	N/A	L

Goal. Conduct an amphibious warfare brief.

Requirement. Given a RFI (simulated or real time), prepare and present an amphibious warfare brief that contains the listed items and fulfills mission requirement. The Journeyman METOC Analyst must be prepared to respond to questions presented by the target audience:

(1) Current weather information.
(2) 24-hour weather information.
(3) Aviation parameters.
(4) Surf forecast.
(5) Tactical assessment.
(6) Atmospheric refractive summary.
(7) Astronomical data.
(8) 24-hour radiological/chemical fallout forecast.

Performance Standard. The Journeyman METOC Analyst must complete the briefing with 24 hours of receipt of RFI. Completion will not be awarded until content and format are in accordance with the references and have been completed once with tactical equipment and once with garrison equipment.

Prerequisite. None.

4. METOC Impact Assessment (MIA)

a. Purpose. To enhance proficiency in the knowledge and skills required for METOC Impact Assessment.

b. General

(1) Administrative Notes. Training shall be conducted by the METOC Analyst Instructor (MAI).

(2) Prerequisite

(a) Completion of the Combat Capable stage of training.

(b) Top Secret clearance.

(c) Assignment to syllabus.

(3) Refresher Training. Refresher events shall be completed semi-annually and when assigned by the METOC Chief.

(4) Stage end performance. Upon completion of this stage of the syllabus the Journeyman METOC Analyst shall have a base knowledge of METOC impact assessment techniques and products for MAGTF operations. Proficiency will be developed through repetitive completion of the events.

c. Crew Requirements. Journeyman METOC Analyst and qualified METOC Analyst instructor.

d. Academic Training. Academic training events are graded and tracked at the administering unit. Supplemental training events and training packages are highly encouraged.

e. Event Training

MIA-236 80.0 Z E N/A L

Goal. Attain proficiency in METOC tactical application software.

Requirement. The Journeyman METOC Analyst shall attend the Joint METOC Tactical Application Course (JMTAC) to receive training on the listed items:

(1) Tactical application software.
(2) Derived software products.
(3) Understanding product output.
(4) Impacts assessment.

Performance Standard. The Journeyman METOC Analyst shall successfully complete JMTAC course and receive completion certificate.

Prerequisite. None.

MIA-237 3.0 Z,R E N/A L

Goal. Utilize Tactical Decision Aid (TDA) programs to produce specified products.

Requirement. Produce specified products using TDA software:

(1) Historical environmental prediction condition (HEPC) summary.
(2) Refractive index profile.
(3) Radar coverage diagrams.
(4) Radar propagation loss.
(5) Platform vulnerability.
(6) Probability of detection.
(7) Electronic support measures.
(8) Electronic countermeasures.
(9) AREPS.
(10) SLAP.
(11) TAWS.

Performance Standard. The Journeyman METOC Analyst must complete the briefing with 3 hours of receipt of RFI. Completion will not be awarded until content and format are in accordance with the references and have been completed once with tactical equipment and once with garrison equipment.

Prerequisite. None.

MIA-238 2.0 Z E N/A L

Goal. Conduct a Search And Rescue (SAR) brief.

Requirement. In accordance with the references and utilizing a completed request for information, prepare and conduct a SAR brief as requested, within 2-hours:

(1) Current and forecast weather information for predetermined areas of operation.
(2) Provide mission planning forecasts to include, but is not limited to:
    (a) Water temperatures.
    (b) Drift data.
    (c) Survival times.
    (d) Current speed and direction.

Performance Standard. The Journeyman METOC Analyst must complete the briefing with 2 hours of receipt of RFI. Completion will not be awarded until content and format are in accordance with the references and have been completed once with tactical equipment and once with garrison equipment.

Prerequisite. None.

MIA-239 3.0 Z E N/A L

Goal. Properly conduct Aviation Strike Brief.

Requirement. In accordance with the references and provided a completed RFI, prepare and conduct an aviation (mission specific) strike weather brief within 3-hours. Include the following information:

(1) Current neph-analysis.
(2) Enroute weather:
    (a) Sky condition.
    (b) Weather.
    (c) Visibility/Slant range visibility (NM).
    (d) Sea surface temperature/in-water survival time.
    (e) Winds.
    (f) Temperatures.
    (g) Turbulence.
    (h) Icing.
    (i) Contrail formation.
    (j) Ditch heading.
(3) Target Area Weather (repeat for each area):
    (a) Sky condition.
    (b) Weather.
    (c) Visibility/slant range visibility (NM).
    (d) Surface winds.
    (e) Maximum/minimum temperatures.
    (f) Cloud tops/ceilings.
    (g) Freezing level.
    (h) D-Values.
(4) Astronomical Data:
    (a) Sunrise/Sunset.
    (b) Sun elevation angles/azimuth.

(c) Beginning/ending civil/nautical twilights.
(d) Moonrise/moonset.
(e) Lunar illumination.
(f) Moon angles elevation/azimuth.
(g) Lux values.
(5) 48-hour outlook.
(6) Tactical assessment.
(7) Electro-Optical sensor performance predictions.

Performance Standard. The Journeyman METOC Analyst must complete the briefing with 243 hours of receipt of RFI. Completion will not be awarded until content and format are in accordance with the references and have been completed once with tactical equipment and once with garrison equipment.

Prerequisite. None.

MIA-240	8.0	Z	E	N/A	L

Goal. Conduct a mission analysis.

Requirement. Given a requirement to provide METOC support conduct a thorough analysis of the mission. At a minimum a thorough analysis should include:

(1) Size.
(2) Activity.
(3) Location.
(4) Unit.
(5) Time.
(6) Equipment.

Performance Standards. Analysis shall be provided to the MAI for evaluation within specified time frame.

Prerequisite. None.

MIA-241	3.0	Z	E	N/A	L

Goal. Assess METOC impacts to amphibious operations.

Requirement. Utilizing METOC equipment and after conducting a thorough mission analysis, the Journeyman METOC Analyst shall assess then brief the METOC impacts on operations. The assessment will consider, at a minimum, the following essential elements of information:

(1) Ceilings.
(2) Sky condition.
(3) Visibility.
(4) Wind.
(5) Temperature.
(6) Precipitation.
(7) Illumination.
(8) Currents.
(9) Tides.
(10) Water temperature.
(11) Sea state.

(12) Surf conditions.
(13) Hazardous weather.
(14) Ice conditions.
(15) Bathymetry.
(16) Bioluminescence.

Performance Standard. The Journeyman METOC Analyst must complete the briefing within 3 hours of receipt of RFI. Completion will not be awarded until content and format are in accordance with the references.

Prerequisite. MIA-240.

MIA-242 3.0 Z E N/A L

Goal. Assess METOC impacts on aviation operations.

Requirement. Utilizing METOC equipment and after conducting a thorough mission analysis, the Journeyman METOC Analyst shall assess then brief the METOC impacts on operations. The assessment will consider, at a minimum, the following essential elements of information:

(1) Ceilings.
(2) Sky condition.
(3) Visibility (surface/slant).
(4) Winds (surface and aloft).
(5) Temperature.
(6) Precipitation.
(7) Hazardous weather.
(8) Turbulence.
(9) Icing.
(10) Hail.
(11) Astronomical data.
(12) Humidity (relative and absolute).
(13) Pressure.
(14) Ditch headings.
(15) Sea surface temperature.

Performance Standard. The Journeyman METOC Analyst must complete the briefing within 3 hours of receipt of RFI. Completion will not be awarded until content and format are in accordance with the references.

Prerequisite. MIA 240.

MIA-243 3.0 Z E N/A L

Goal. Assess METOC impacts on ground operations.

Requirement. Utilizing METOC equipment and after conducting a thorough mission analysis, the Journeyman METOC Analyst shall assess then brief the METOC impacts on operations. The assessment will consider, at a minimum, the following essential elements of information:

(1) Ceilings.
(2) Sky condition.
(3) Visibility.
(4) Wind.
(5) Temperature.

(6) Precipitation.
(7) Snow/ice depth and coverage.
(8) Freeze and thaw depth.
(9) Hazardous weather.
(10) Astronomical data.
(11) Sea/shore conditions (tides, currents, surf, water temperature).
(12) Vertical wind profile.
(13) River stage and currents.

Performance Standard. The Journeyman METOC Analyst must complete the briefing within 3 hours of receipt of RFI. Completion will not be awarded until content and format are in accordance with the references.

Prerequisite. MIA-240

MIA-244	3.0	Z	E	N/A	L

Goal. Assess METOC impacts on intelligence operations.

Requirement. Utilizing METOC equipment and after conducting a thorough mission analysis, the Journeyman METOC Analyst shall assess then brief the METOC impacts on operations. The assessment will consider, at a minimum, the following essential elements of information:

(1) Ceilings.
(2) Sky condition.
(3) Visibility.
(4) Wind.
(5) Temperature.
(6) Precipitation.
(7) Snow depth and coverage.
(8) Astronomical data.
(9) EM propagation.
(10) Hazardous weather.

Performance Standard. The Journeyman METOC Analyst must complete the briefing within 3 hours of receipt of RFI. Completion will not be awarded until content and format are in accordance with the references.

Prerequisite. MIA-240.

MIA-245	3.0	Z	E	N/A	L

Goal. Assess METOC impacts on communication operations.

Requirement. Utilizing METOC equipment and after conducting a thorough mission analysis, the Journeyman METOC Analyst shall assess then brief the METOC impacts on operations. The assessment will consider, at a minimum, the following essential elements of information:

(1) Space weather.
(2) Wind.
(3) Temperature profile.
(4) Precipitation.
(5) Snow depth and coverage.
(6) EM propagation.

(7) Hazardous weather.

Performance Standard. The Journeyman METOC Analyst must complete the briefing within 3 hours of receipt of RFI. Completion will not be awarded until content and format are in accordance with the references.

Prerequisite. MIA-240.

MIA-246 3.0 Z E N/A L

Goal. Assess METOC impacts on nuclear, biological and radiological operations.

Requirement. Utilizing METOC equipment and after conducting a thorough mission analysis, the Journeyman METOC Analyst shall assess then brief the METOC impacts on operations. The assessment will consider, at a minimum, the following essential elements of information:

(1) Ceilings.
(2) Sky condition.
(3) Humidity.
(4) Wind.
(5) Temperature.
(6) Atmospheric stability.
(7) Precipitation.
(8) EM propagation.
(9) Hazardous weather.
(10) Astronomical data.

Performance Standard. The Journeyman METOC Analyst must complete the briefing within 3 hours of receipt of RFI. Completion will not be awarded until content and format are in accordance with the references.

Prerequisite. MIA-240.

MIA-247 3.0 Z E N/A L

Goal. Assess METOC impacts on logistical operations.

Requirement. Utilizing METOC equipment and after conducting a thorough mission analysis, the Journeyman METOC Analyst shall assess then brief the METOC impacts on operations. The assessment will consider, at a minimum, the following essential elements of information:

(1) Ceilings.
(2) Sky condition.
(3) Visibility.
(4) Wind.
(5) Temperature.
(6) Precipitation.
(7) Snow depth and coverage.
(8) Astronomical data.
(9) EM propagation.
(10) Hazardous weather.
(11) Currents.
(12) Tides.
(13) Water temperature.

(14) Sea state.
(15) Surf conditions.
(16) Hazardous weather.
(17) Ice conditions.
(18) Bathymetry.

Performance Standard. The Journeyman METOC Analyst must complete the briefing within 3 hours of receipt of RFI. Completion will not be awarded until content and format are in accordance with the references.

Prerequisite. MIA-240.

5. METOC Equipment

a. Purpose. To enhance proficiency in the knowledge and skills required to operate, maintain and configure METOC equipment and systems.

b. General

(1) Administrative Notes. Training shall be conducted by the METOC Analyst Instructor (MAI).

(2) Prerequisite

(a) Completion of the Combat Capable stage of training.

(b) Top Secret clearance.

(c) Assignment to syllabus.

(3) Refresher Training. Refresher events shall be completed semi-annually and when assigned by the METOC Chief.

(4) Stage end performance. Upon completion of this stage of the syllabus the Journeyman METOC Analyst shall have a base knowledge of METOC equipment programs. Proficiency will be developed through repetitive completion of the task.

c. Crew Requirements. Journeyman METOC Analyst and qualified METOC Analyst instructor.

d. Academic Training. Academic training events are graded and tracked at the administering unit. Supplemental training events and training packages are highly encouraged.

e. Event Training

EQP-248	24	Z	E	N/A	L

Goal. Utilizing METOC software and hardware, develop mission support forecasts and products.

Requirement. Using tactical equipment, retrieve and manipulate meteorological data to assist in the creation of routine and tailored meteorological forecasts and products. The METOC Analyst Instructor shall

select products to be developed. Proficiency must be exhibited on the following software suites:

(1) Satellite imagery software.
(2) Radar imagery software.
(3) METAR observation software.
(4) Aviation forecasts software.
(5) Model products retrieval and manipulation software.
(6) SKEW T LOG P diagram manipulation software.

Performance Standard. Without violating data input and output, The Journeyman METOC Analyst must operate all software suites on tactical and garrison hardware.

Prerequisite. None.

EQP-249 8 Z E N/A L

Goal. Supervise maintenance of METOC equipment.

Requirement.

(1) The Journeyman METOC Analyst will supervise operator maintenance of METOC equipment.
(2) Supervise adherence to preventative maintenance schedule.
(3) Identify equipment maintenance deficiencies to the appropriate authority.
(4) Draft and submit equipment casualty reports.
(5) Conduct maintenance on the established METOC database and networking.

Performance Standard. Maintenance supervision must be in compliance with references to ensure operational effectiveness of METOC equipment.

Prerequisite. None.

EQP-250 1.0 Z E N/A L

Goal. Operate the garrison Doppler radar system.

Requirement. Given a Principle User’s Processor and Systems Console and in accordance with the reference(s), operate the WSR88D (or like) Radar. Journeyman METOC Analyst shall discuss and operate the following:

(1) System console.
(2) Graphic tablet and puck.
(3) Alphanumeric displays.
(4) Monitor self-performance.
(5) Archive data.
(6) Ability to retrieve data.

Performance Standard. Requirement to be completed in accordance with references and not violate system integrity.

Prerequisite. None.

EQP-251 1.0 Z E N/A L

Goal. Configure and operate the garrison Lightning Position And Tracking System (LPATS).

Requirement. Given a LPATS, the Journeyman METOC Analyst will conduct the following operations:

(1) Configure the system.
(2) Configure background maps.
(3) Configure range alarms.
(4) Configure loops.
(5) Operate the system.
(6) Identify lightning strikes.
(7) Assess impact to operations.

Performance Standard. SNM must conduct requirement to allow for maximum time for warning of lightning strikes without violating system and communications stability.

Prerequisite. None.

EQP-252 3.0 Z E N/A L

Goal. Display operating knowledge of tactical Doppler radar system(s).

Requirement. Given a tactical radar meteorological system, applicable operating manuals and understanding the limitations and capabilities of Doppler radar systems, display a working knowledge of Radar configurations. Configuration should allow for ingest, manipulation and production of derived radar products. The Journeyman METOC Analyst shall perform, at a minimum, the following tasks:

(1) Conduct power up/power down procedures.
(2) Conduct log on/log off functions.
(3) Perform technical operating functions.
(4) Ensure configuration is commensurate with desire product generation.
    (a) Pulse repetition frequency.
    (b) Gate width.
    (c) Beam width.
(5) Archive generated products.
(6) Discuss the core Doppler radar products and the products derived from them.
(7) Ensure that Doppler radar products are available through electronic means to end customer.

Performance Standard. Completion of the requirement without violating system integrity, configuration or communications.

Prerequisite. None.

EQP-253 3.0 Z E N/A L

Goal. Display operating knowledge of tactical satellite system(s).

Requirement. Given a tactical satellite system, applicable operating manuals and understanding the limitations and capabilities of satellite imagery acquisition and enhancements, display a working knowledge of satellite system operations and configuration. Configuration shall allow for the ingest, manipulation and production of raw and post-processed satellite imagery. Complete the following:

(1) Conduct power up/power down procedures.
(2) Conduct log on/log off functions.
(3) Perform technical operating functions.
(4) Ensure configuration is commensurate with desire product generation.
(5) Scheduling of imagery is established.
(6) Update of ephemeris Data is completed
(7) Ensure product path for received products is correct.
(8) Ensure naming conventions are adhered to.
(9) Ensure signal decryption values are set for reception of scheduled passes.
(10) Can discern priority of imagery scheduling based the capabilities and limitations of enhancements of satellite imagery compared to the present Meteorological conditions.
(11) Archive imagery for retrieval at a later time.
(12) Produce geo-referenced satellite imagery that can be overlaid on the common operating picture via the GCCS-M/C2PC system.

Performance Standard. Completion of the requirement without violating the system integrity, configuration or communications.

Prerequisite. None.

EQP-254 16.0 Z E N/A L

Goal. Embarkation of the MetMF(R).

Requirement. Given a simulated mission requirement and in accordance with the references, embark of the MetMF(R) to the designated area. Perform the following:

(1) Supervise pack up the MetMF(R).
(2) Supervise lift.
(3) Transport classified materials.
(4) Unpack the MetMF(R) at the designated area.
(5) Establish METOC support.

Performance Standard. Embarkation procedures shall be evaluated by a Master METOC Analyst and must be conducted in compliance with references. The refresh rate is semi-annually.

Prerequisite. None.

EQP-255 24 Z E N/A L

Goal. Perform intermediate network administrative functions.

Requirement. Given an established METOC network and appropriate level of permission, conduct intermediate network administrative function to ensure continuous receipt and dissemination of METOC data relevant to mission requirements. Under the supervision of a METOC Analyst Instructor or Master METOC Analyst, the Journeyman METOC Analyst shall complete the following tasks:

(1) Troubleshoot existing METOC network through root network command and knowledge.
(2) Modify existing network configuration to ensure METOC data required for production and dissemination of forecast products is achieved.
(3) Familiarize all subordinate marines with basic networking knowledge to prevent incidental corruption of the Network.
(4) Monitor the network for:
    (a) Security intrusions/violations
    (b) Products being received as scheduled.
(5) Add or remove additional computers/peripheral as directed by the METOC Chief.
(6) Monitor the network applications to ensure passwords and usernames are valid and products are being received as scheduled.
(7) Limit the use of the network to official business.

Performance Standard. The Journeyman METOC Analyst actions shall not violate system or software integrity and must be in compliance with references.

Prerequisite. None.

EQP-256 8.0 Z E N/A L

Goal. Setup and conduct operational checks of each subsystem inherent to the METMF(R).

Requirement. At designated area and in accordance with the reference, the Journeyman METOC Analyst shall perform the following:

(1) Shelter Subsystem (SSS) – Place and level the shelter and ECUs ensure availability of safety equipment.
(2) Processing Subsystems (PCS).
    (a) Power up component and log on to the applicable system software of the PCS.
    (b) Test network connectivity for each component.
(3) Meteorological Radar System (MRS).
    (a) Conduct power up procedures for MRS.
    (b) Log on to the system.
    (c) Ensure desired processes are scheduled.
(4) Meteorological Satellite Subsystem (MSS).
    (a) Place and connect the satellite antennas.
    (b) Energize the components.
    (c) Log on to the system.
    (d) Generate satellite prediction schedule.

(e) Ensure data capture is achieved, (ensuring proper keying of crypto gear as applicable).

(5) Communications Subsystem (CSS).
(a) Place and connect antennas.
(b) Energize components.
(c) Key required Crypto gear as applicable.
(d) Conduct communications checks.

(6) Portable Meteorological Subsystem (PMS).
(a) Connect system components.
(b) Energize components.
(c) Log on to system.
(d) Establish required network or workgroup.
(e) Ensure receipt of products.

(7) Local Sensor Subsystem (LSS).
(a) Place and connect Local Sensor.
(b) Place and connect the ceilometer.
(c) Energize component of the LSS.
(d) Log on to system.
(e) Open applicable software.
(f) Ensure receipt of data.

(8) Remote Sensor Subsystem (RSS).
(a) Place and connect Remote Sensor(s).
(b) Place and connect Remote Sensor antenna array.
(c) Energize component of the RSS.
(d) Log on to system.
(e) Open applicable software.
(f) Ensure receipt of data.

(9) Rawinsonde subsystem (RWS).
(a) Place and connect Antenna array.
(b) Interface RWS with PCS.
(c) Energize system.
(d) Enter coefficients and local data.
(e) Launch sounding.
(f) Ensure receipt of data.

(10) Video Subsystem (VSS).
(a) Locate and connect components.
(b) Energize components.
(c) Ensure video products are being transmitted.

Performance Standard. The Journeyman METOC Analyst actions shall not violate system or software integrity and must be in compliance with references. The refresh rate is semi-annually.

Prerequisite. None.

External Syllabus Support. Heavy equipment.

EQP-257 24 Z E N/A L

Goal. Support tactical operations utilizing the METMF(R).

Requirement. In a simulated or actual deployed environment, perform the following actions:

(1) Provide secure and unsecured pilot to METRO communications.
(2) Provide tower to METRO communications.
(3) Respond to requests for information (RFIs)

(4) Conduct METOC impact assessments to operations in Area of interest.
(5) Conduct data transmission and reception operations.
(6) Conduct data transfer to and from the common operating picture to determine and provide relevant tactical METOC picture.
(7) Conduct secure and unsecured voice communications.
(8) Acquire and analyze all satellite imagery for the production of forecasts and assessment of impacts to MAGTF operations.
(9) Acquire and analyze all radar imagery for the production of forecasts/warnings and advisories and assessment of impacts to MAGTF operations.
(10) Acquire and analyze synoptic, mesoscale and Microscale METOC model output for the production of forecasts and assessment of impacts to MAGTF operations.
(11) Acquire, analyze, encode and disseminate local and remotely sensed surface observations for the production of forecasts and assessment of impacts to MAGTF operations.
(12) Conduct upper atmospheric observations for the production of forecasts and assessment of impacts to MAGTF operations.
(13) Acquire and analyze all lightning data for the production of forecasts/warnings and advisories and assessment of impacts to MAGTF operations.
(14) Develop impact assessment briefing for applicable MAGTF component for large scale dissemination via oral, electronic, or remote means.

Performance Standard. The Journeyman METOC Analyst must be able to perform all tasks with no supervision. The Master METOC Analyst shall evaluate performance of the event for completion.

Prerequisite. None.

EQP-258 24 Z E N/A L

Goal. Support tactical operations utilizing the NITES IV.

Requirement. In a simulated or actual deployed environment, perform the following actions:

(1) Deploy and setup of NITES IV.
(2) Utilizing directed means provide METOC impact assessment to supported element.
(3) Conduct satellite communications operations (if available) for data receipt and communications.
(4) Conduct data receipt operations.
(5) Conduct data transfer to and from the common operating picture via predetermined software to determine and provide relevant tactical METOC impact assessments.
(6) Conduct graphical data retrieval and analyzation in support of impact assessment.
(7) Conduct analyzation of locally sensed data for METOC impact assessment.
(8) Develop impact assessment briefing for applicable MAGTF component for large scale dissemination via oral, electronic and remote video means.

Performance Standard. The Journeyman must be able to perform all tasks with no supervision. The Master METOC Analyst shall evaluate performance of the event for completion.

Prerequisite. None.

EQP-259 24 Z E N/A L

Goal. Operate garrison METOC equipment to provide METOC support to base operations.

Requirement. The Journeyman METOC Analyst must exhibit proficiency in the ability to configure, operate and conduct operator level troubleshooting of the following METOC systems:

(1) Meteorological Integrated Data Display System (MIDDS).
(2) Lightning Position and tracking system (LPATS).
(3) Pilot to Forecaster Radio (METRO).
(4) Doppler radar system (WSR-88D).
(5) Wet Bulb Temperature Index Sensors. (WBGTI).
(6) Tower to metro displays/communications (WXVISION).
(7) Hand Held equipment. (PMQ-3, psychrometers).
(8) Automated Surface Observing System (ASOS).

Performance Standard. Without error, the Journeyman METOC Analyst shall complete each requirement in accordance with the references and not degrade the system integrity, stability or operation.

Prerequisite. None.

233. COMBAT QUALIFICATION TRAINING

1. Plans, Policies and Procedures (PPP)

a. Purpose. To enhance proficiency in the knowledge and skills of the plans, policies and procedures required to provide combat capable METOC support.

b. General

(1) Administrative Notes. Training shall be conducted by the METOC Analyst Instructor (MAI) or Master METOC Analyst.

(2) Prerequisite

(a) Completion of the Combat Capable stage of training.

(b) Top Secret clearance.

(c) Assignment to syllabus.

(3) Refresher Training. Refresher events shall be completed semi-annually and when assigned by the METOC Chief.

(4) Stage end performance. Upon completion of this stage of the syllabus the Journeyman METOC Analyst shall have a solid knowledge of METOC

plans, policies and procedures. Proficiency will be developed through repetitive completion of the events.

c. Crew Requirements. Journeyman METOC Analyst and qualified METOC Analyst instructor or Master METOC Analyst.

d. Academic Training. Academic training events are graded and tracked at the administering unit. Supplemental training events and training packages are highly encouraged.

e. Event Training

PPP-300	56	Z	E	N/A	L

Goal. Draft input to annexes of operational orders.

Requirement. The Journeyman METOC Analyst shall draft and submit METOC input to the annexes to operational orders and letters of instruction (LOI). SNM will complete each of the following:

(1) Communications and information systems annex, Annex K.
(2) Intelligence preparation annex, Annex B.
(3) METOC Services annex, Annex H.
(4) Collection plan annex, Annex J.

Performance Standard. Draft METOC input must be in JOPES (or applicable format) and contain all required information to support designated mission and designate all external requirement for successful METOC support.

Prerequisite. None.

PPP-301	3.0	Z	E	N/A	L

Goal. Implement and supervise logistical support program.

Requirement.

(1) The Journeyman METOC Analyst will implement the METOC logistical support programs ensuring the following items are conducted in accordance with established orders and directives.
   (a) Supply requisitions.
   (b) Equipment outages.
   (c) Fiscal.

(2) The Journeyman METOC Analyst will provide input to the Master METOC Analyst on the improvements and deficiencies to the following logistical support programs.
   (a) Supply.
   (b) Fiscal.
   (c) Equipment.

Performance Standard. Must be in compliance with applicable orders and directives.

Prerequisite. None.

PPP-302 6.0 Z E N/A L

Goal. Identify and solicit METOC support requirement.

Requirement. Solicit, through the use of training and forms to end-users, new and ongoing METOC support requirements. Evaluation of input shall be utilized to complete the following tasks:

(1) Validation of METOC service requirements.
(2) Preparation of draft annexes of operational orders based on identified requirements.
(3) Submission of METOC support requirements support to the master METOC analyst.

Performance Standard. Recommendation must improve METOC support.

Prerequisite. None.

PPP-303 56 Z E N/A L

Goal. Identify METOC support issues.

Requirement. The Journeyman METOC Analyst shall draft and submit the listed reports to identify METOC support issues:

(1) Draft and submit to the METOC Chief, Joint Universal Lessons Learned Summary (JULLS) reports.
(2) Draft and submit to the METOC Chief, METOC After Action Reports.
(3) Draft and submit to the METOC Chief, Marine Corps Lessons Learned System (MCLLS) reports.
(4) Draft and submit to the METOC Chief, Mission Needs Statements (MNS) reports.
(5) Draft and submit to the METOC Chief, Universal Needs Statement (UNS) reports.

Performance Standard. Content and format shall be in accordance with orders and directives governing the report. Repetition of event required until all reports are generated correctly (format and content).

Prerequisite. None.

PPP-304 24 Z E N/A L

Goal. Conduct QA on Journeyman METOC Analyst products.

Requirement. In accordance with the QA program, the METOC Analyst shall complete the following tasks:

(1) Validate parameters of forecasted products listed for format and accuracy.
    (a) Forecast elements.
    (b) PIREPs.
    (c) WEAXs.
    (d) Daily forecasts.
    (e) Local derived mission required products.

(2) Advise the METOC Chief on problems and exceptional performance patterns highlighted by the quality assurance program.
(3) The Journeyman METOC Analyst shall provide recommendations to enhance the quality assurance program.

Performance Standard. Must be completed in accordance with the QA references.

Prerequisite. None.

PPP-305 24 Z E N/A L

Goal. Conduct security procedures in accordance with security regulations and orders.

Requirement. Given knowledge of the references, conduct security procedures within the METOC section in accordance with references.

Performance Standard. Complete the following:

(1) Perform physical security awareness.
(2) Maintain security access logbook.
(3) Operate communication security (COMSEC) equipment IAW regulations.
(4) Exercise emergency action/ destruction plans as required.
(5) Conduct subordinate security training/awareness classes.

Prerequisite. None.

2. Consolidated METOC Operations (CMO)

a. Purpose. To enhance proficiency in the knowledge and skills of the METOC operations.

b. General

(1) Administrative Notes. Training shall be conducted by the Master METOC Analyst or METOC chief.

(2) Prerequisite

(a) Completion of the Combat Capable stage of training.

(b) Top Secret clearance.

(c) Assignment to syllabus.

(3) Refresher Training. Refresher events shall be completed semi-annually and when assigned by the METOC Chief.

(4) Stage end performance. Upon completion of this stage of the syllabus the Journeyman METOC Analyst shall have a solid knowledge of METOC plans, policies and procedures. Proficiency will be developed through repetitive completion of the events.

c. Crew Requirements. The Journeyman METOC Analyst and qualified METOC Analyst Instructor or Master METOC Analyst.

d. Academic Training. Academic training events are graded and tracked at the administering unit. Supplemental training events and training packages are highly encouraged.

e. Event Training

CMO-306	24	Z	E	N/A	L

Goal. Conduct METOC support operations for Marine Expeditionary Forces.

Requirement. Provide METOC support through all phases of MEU planning and execution operations. SNM will complete, at a minimum, the following items:

(1) Participate in all pre-deployment training of rapid response planning processes (R2P2).
(2) Coordinate USMC METOC support requirements for the MEU.
(3) Liaison with MEF METOC commands on METOC support issues.
(4) Identify and correct USMC METOC support deficiencies.
(5) Provide operational planning products in support of the IPB process.
(6) Deploy with the MEU command element.

Performance Standard. SNM will ensure that Marine METOC interest and planning requirements are addressed.

Prerequisite. None.

CMO-307	24	Z	E	N/A	L

Goal. Conduct METOC support functions in support of Marine Expeditionary Forces and major subordinate command plans and operations.

Requirement. Provide USMC METOC specific input to plans and operations during a live or simulated MEF and MSC command element operations. SNM will, at a minimum, complete the following tasks:

(1) Coordinate USMC METOC support.
(2) Liaison with subordinate and adjacent METOC commands.
(3) Identify and correct USMC METOC support deficiencies.
(4) Provide operational planning products in support of the IPB process.

Performance Standard. SNM will ensure that Marine METOC interest and planning requirements are addressed.

Prerequisite. None.

CMO-308 24 Z E N/A L

Goal. Conduct joint operation subject matter expert functions.

Requirement. Provide USMC METOC specific input to plans and operations during a live or simulated joint staff operation. SNM will, at a minimum, complete the following tasks:

(1) Coordinate USMC METOC support.
(2) Liaison with subordinate METOC commands.
(3) Identify and correct USMC METOC support deficiencies.
(4) Provide operational planning products in support of the IPB process.

Performance Standard. SNM will ensure that Marine METOC interest and planning requirements are addressed.

Prerequisite. None.

CMO-309 16 Z E N/A L

Goal. Conduct a pre-deployment inspection.

Requirement. Semi-annually conduct a pre-deployment inspection of Weather Service Section personnel and equipment in order to facilitate rapid deployment of assets as may be required:

(1) Conduct personnel inspections.
(2) Wills and power of attorneys.
(3) Family readiness plans intact.
(4) Minimum issue inspections.
(5) Clearance verification.
(6) Courier cards verification.
(7) Conduct equipment readiness inspections.
(8) Review embarkation procedures.
(9) Review equipment readiness.
(10) Inspect equipment reporting procedures.
(11) Inspect software requirements.
(12) Inspect logistical support package.
(13) Conduct publication and reference inspection.
(14) Inspect deployable publication library is commensurate with mission.
(15) Inspect deployable desktop procedures are relevant and up to date.

Performance Standard. Completion shall be awarded upon satisfactory completion of the requirement in accordance with applicable references.

Prerequisite. None.

CMO-310 24 Z E N/A L

Goal. Supervise the embarkation of the MetMF(R).

Requirement. Given a mission (simulated or live) requirement and in accordance with the references, supervise the embarkation of the MetMF(R)

to the designated area. Supervision of embarkation will, at a minimum, require the following supervisory tasks:

(1) Pre-deployment operational checks.
(2) Inventory of supplies.
(3) Pack out.
(4) Personnel gear inspections.
(5) Transportation of classified materials.
(6) Lift and transport of equipment.
(7) Unpack.
(8) Setup.
(9) Post movement operational checks.
(10) Retrograde.
(11) Conduct hot wash of accomplishments and deficiencies.
(12) Generate and submit after action and submit to METOC Chief.

Performance Standard. Completion of all tasks listed must be completed. Movement (local or remote) of the complex required and cannot be waived. SNM will complete the requirement in a live or simulated event under the evaluation of a Master METOC Analyst.

Prerequisite. None.

3. METOC IMPACT ASSESSMENT (MIA)

a. Purpose. To enhance proficiency in the knowledge and skills of METOC impact assessment.

b. General

(1) Administrative Notes. Training shall be conducted by the Master METOC Analyst or METOC chief.

(2) Prerequisite

(a) Completion of the Combat Capable stage of training.

(b) Top Secret clearance.

(c) Assignment to syllabus.

(3) Refresher Training. Refresher events shall be completed semi-annually and when assigned by the METOC Chief.

(4) Stage end performance. Upon completion of this stage of the syllabus the Journeyman METOC Analyst shall have a solid knowledge of assessing METOC impacts on operations and planning. Proficiency will be developed through repetitive completion of the events.

c. Crew Requirements. The Journeyman METOC Analyst and qualified METOC Analyst Instructor or Master METOC Analyst.

d. Academic Training. Academic training events are graded and tracked at the administering unit. Supplemental training events and training packages are highly encouraged.

e. Event Training

MIA-311	24	Z	E	N/A	L

Goal. Utilize TDA programs to produce products to support planning and execution of joint operations and missions.

Requirement. Produce mission specific impact assessments for the listed joint missions. The Journeyman METOC Analyst shall exhibit a comprehensive knowledge of METOC element impacts on the major weapon and support categories and missions:

(1) Humanitarian aid missions.
(2) Deep strike missions.
(3) Force on force missions.
(4) Over the horizon missions.
(5) Counterinsurgency missions.
(6) Weaponry.
    (a) Weapons of mass destruction.
    (b) Laser guided munitions.
    (c) Infrared guided munitions.
    (d) Visual guided munitions.
    (e) GPS guided munitions.
(7) Communications.
    (a) Satellite.
    (b) UHF/VHF.
(8) Trafficability.

Performance Standard. The Journeyman METOC Analyst must complete the briefing with 3 hours of receipt of RFI. Completion will not be awarded until content and format are in accordance with the references and have been completed with tactical equipment and garrison equipment.

Prerequisite. None.

4. METOC Equipment

a. Purpose. To enhance proficiency in the knowledge and skills of the METOC equipment.

b. General

(1) Administrative Notes. Training shall be conducted by the Master METOC Analyst or METOC Chief.

(2) Prerequisite

(a) Completion of the Combat Capable stage of training.

(b) Top Secret clearance.

(c) Assignment to syllabus.

(3) Refresher Training. Refresher events shall be completed semi-annually and when assigned by the METOC Chief.

(4) Stage end performance. Upon completion of this stage of the syllabus the Journeyman METOC Analyst shall have a solid knowledge of METOC equipment. Proficiency will be developed through repetitive completion of the events.

c. Crew Requirements. Journeyman METOC Analyst and qualified METOC Analyst instructor or Master METOC Analyst.

d. Academic Training. Academic training events are graded and tracked at the administering unit. Supplemental training events and training packages are highly encouraged.

e. Event Training

EQP-312	16	Z	E	N/A	L

Goal. Deploy the MetMF(R).

Requirement. Given a simulated mission requirement and in accordance with the references, embark the MetMF(R) to the designated area. Perform the following:

(1) Supervise pack up the MetMF(R).
(2) Supervise lift.
(3) Supervise the unpacking of the MetMF(R) at the designated area.

Performance Standard. Deployment procedures shall be evaluated by a Master METOC Analyst and must be conducted in compliance with references. The refresh rate is semi-annually.

Prerequisite. None.

External Syllabus Support. Heavy Equipment.

EQP-313	24	Z	E	N/A	L

Goal. Develop and manage METOC database.

Requirement. Develop and semiannually review METOC databases for storage of METOC products, ensuring database content are readily available and relevant to mission requirements. Database will conform to Marine Corps Information technology standards (ITS). Database development and review will be focused toward the storage of:

(1) Locally ingested products.
(2) Locally derived products.
(3) Local developed mission briefings.
(4) Operational message traffic concerning METOC support to the MAGTF components.

Performance Standard. Tasks must be completed in accordance with references.

Prerequisite. None.

EQP-314 24 Z E N/A L

Goal. Supervise METOC equipment maintenance.

Requirement. SNM will supervise operator maintenance on tactical and garrison METOC equipment to ensure optimum performance. SNM will also identify deficiencies requiring equipment casualty reporting and validate format and content of draft Casualty Reports.

Performance Standard. Requirements must in compliance with orders and directives.

Prerequisite. None.

EQP-315 6.0 Z E N/A L

Goal. Display knowledge of Doppler radar system(s) management.

Requirement. Given a Doppler radar system, applicable operating manuals and understanding the configurations, limitations, and capabilities of Doppler radar systems, display a working knowledge of Doppler radar management functions. Configuration should allow for ingest, analysis, manipulation, and production of derived radar products. The Journeyman METOC Analyst shall perform, at a minimum, the following tasks:

(1) Ensure configuration is commensurate with desire product generation.
   (a) Pulse repetition frequency.
   (b) Sample rates.
   (b) Gate width.
   (c) Beam width.
   (d) Operating frequency.
   (e) Scanning speeds.
(2) Archive generated products.
(3) Discuss the Doppler radar product algorithms and the products derived from them.
(4) Ensure that Doppler radar products are available through electronic means to end customer.
(5) Ensure hazards of electromagnetic radiation to fuels (HERF) procedures are implemented and adhered to.
(6) Ensure hazards of electromagnetic radiation to personnel (HERP) procedures are implemented and adhered to.
(7) Ensure hazards of electromagnetic radiation to ordinance (HERO) procedures are implemented and adhered to.

Performance Standard. Completion of the requirement so as not to adversely affect network communications, radar system software or hardware.

Prerequisite. None.

EQP-316 48 Z E N/A L

Goal. Perform system management functions of applicable subsystems inherent to the MetMF(R).

Requirement. In accordance with applicable system manuals and mission requirements, complete the task listed to configure and manage the components of the METMF(R) ensuring continuous data ingest and dissemination:

(1) Processing Subsystem (PCS).
  (a) Establish and maintain integrity of operating systems.
  (b) Establish and configure the components of the network.
  (c) Install authorized software upgrades and patches.
  (d) Optimize the effective flow of meteorological data throughout the communication paths.
  (e) Establish network naming conventions and paths of received data.
  (f) Maintain the meteorological system interface with network and web dissemination and storage.
  (g) Obtain proper keying material for use in CCI equipment.
(2) Meteorological Radar System (MRS).
  (a) Establish and maintain system setup and configuration parameters.
  (b) Archive/Restore configuration data to tape. (Level 0 Dump tape).
  (c) Install system software when required.
  (d) Establish standard processes for desired products.
  (e) Establish standard product set for each established process.
  (f) Configure network interfaces within the operating system and application software.
  (g) Establish and manage the scheduled processes.
  (h) Create underlay/overlays for the desired AO.
  (i) Ensure configuration and operation are within frequencies allocated and in accordance with safety requirements.
(3) Meteorological Satellite Subsystem (MSS).
  (a) Establish and maintain system setup and configuration parameters.
  (b) Archive/Restore configuration data to tape. (Level 0 Dump tape).
  (c) Install system software when required.
  (d) Configure network interface within the operating system.
  (e) Maintain and follow file naming conventions.
  (f) Configure automatic export of satellite imagery to meet mission requirements.
(4) Communications Subsystem (CSS).
  (a) Obtain appropriate keying material for system.
  (b) Ensure appropriate frequencies have been allocated for use.
  (c) Ensure configuration and operation are within frequencies allocated and in accordance with safety requirements.
(5) Local/Remote Sensor Subsystem (LSS/RSS).
  (a) Configure software and hardware interfaces for data reception.
  (b) Configure software for data export and archive.
(6) Rawinsonde subsystem (RWS).

(a) Configure UMQ-12 for different locations and output types.

Performance Standard. Requirement must be meet without violating component, system or network integrity.

Prerequisite. None.

234. FULL COMBAT QUALIFICATION TRAINING

1. Plans, Policies and Procedures (PPP)

a. Purpose. To enhance proficiency in the knowledge and skills of the plans, policies and procedures required to provide combat capable METOC support.

b. General

(1) Administrative Notes. Training shall be conducted by the METOC Analyst Instructor (MAI) or Master METOC Analyst.

(2) Prerequisite

(a) Completion of the Combat Capable stage of training.

(b) Top Secret clearance.

(c) Assignment to syllabus.

(3) Refresher Training. Refresher events shall be completed semi-annually and when assigned by the METOC Chief.

(4) Stage end performance. Upon completion of this stage of the syllabus the Journeyman METOC Analyst shall have a solid knowledge of METOC plans, policies and procedures. Proficiency will be developed through repetitive completion of the events.

c. Crew Requirements. Journeyman METOC Analyst and qualified METOC Analyst instructor or Master METOC Analyst.

d. Academic Training. Academic training events are graded and tracked at the administering unit. Supplemental training events and training packages are highly encouraged.

e. Event Training

PPP-400	51	Z	E	N/A	L

Goal. Validate and submit input to annex of operational orders.

Requirement. The Master METOC Analyst shall validate content and format of draft (live or simulated) and submit METOC input to the annexes of operational orders and LOIs to the requesting command. SNM will complete the requirement on each of the following:

(1) Communications and information systems annex, Annex K.
(2) Intelligence preparation annex, Annex B.

(3) METOC services annex, Annex H.
(4) Collection plan annex, Annex J.

Performance Standard. Draft METOC input must be in JOPES (or applicable format), be in accordance with orders and directives and contain all required information to support designated mission and designate all external requirement for successful METOC support.

Prerequisite. None.

PPP-401 51 Z E N/A L

Goal. Manage security program.

Requirement. SNM will complete the security tasks listed in accordance with local and higher echelon security programs:

(1) Coordinate establishment, procedures for, and location of secondary controls points.
(2) Establish emergency action plans.
(3) Coordinate communication security program.
(4) Review security program.
(5) Identify communication security requirements.
(6) Identify information security requirements.
(7) Identify physical security requirements.
(8) Identify personnel security requirements.
(9) Maintain security control access rosters.
(10) Report security violations to higher.
(11) Establish procedures for safeguarding handling and access to classified materials.
(12) Train subordinate leaders on the content of the security manager’s course.
(13) Coordinate annual security refresher training for METOC personnel.

Performance Standard. SNM shall complete requirement in accordance with orders and directives governing security procedures.

Prerequisite. None.

PPP-402 51 Z E N/A L

Goal. Manage training program.

Requirement. SNM will complete the tasks listed in accordance with local and higher echelon security programs:

(1) Actively monitor career progression training.
(2) Supervise career progression training.
(3) Implement corrective training actions.
(4) Identify training deficiencies.
(5) Report training status to Weather Officer or unit.
(6) Revise training programs.
(7) Review training programs.
(8) Conduct certification boards for designation and qualifications.

(9) Ensure completed progression training is documented and entered into the appropriate system.

Performance Standard. Must meet training requirements establish by orders and directives.

Prerequisite. None.

PPP-403 24 Z E N/A L

Goal. Manage personnel program.

Requirement. SNM will complete the tasks listed in accordance with local and higher echelon personnel programs:

(1) Assign mentors.
(2) Supervise personnel readiness.
(3) Supervise certification of personnel.
(4) Mentor personnel.
(5) Advise senior leadership of personnel issues.
(6) Counsel personnel.
(7) Identify manpower requirements.
(8) Coordinate assignment of personnel.
(9) Ensure family readiness.
(10) Conduct final personnel inspections.
(11) Provide input for advancement and retention.
(12) Recommend personnel for awards, special recognition and disciplinary actions.
(13) Recommend proficiency and conduct marks.
(14) Provide input for fitness reports (FITREPS).
(15) Assess individual proficiency and conduct.

Performance Standard. Must be in compliance with orders and directives.

Prerequisite. None.

PPP-404 24 Z E N/A L

Goal. Manage logistical support program.

Requirement. SNM will complete the tasks listed in accordance with local and higher echelon logistical support programs:

(1) Review, identify and coordinate personnel requirements commensurate with support requirements.
(2) Review, identify and coordinate engineer support requirements.
(3) Review, identify and coordinate Fly-in support package requirements.
(4) Review, identify and coordinate contingency support package requirements.
(5) Review, identify and coordinate follow on support package requirements.
(6) Review, identify, coordinate, and establish classified material transportation plan.
(7) Review, identify and coordinate transportation requirements.
(8) Review, identify and coordinate facilities support requirements.

(9) Conduct site surveys.
(10) Review, identify and coordinate embarkation requirements.
(11) Review, identify and coordinate supply requirements.
(12) Review, identify and coordinate hazardous material plan.
(13) Review, identify and coordinate time phased force deployment data (TPFDD).
(14) Review, identify and coordinate equipment density list (EDL)
(15) Review, identify and correct personnel equipment deficiencies.
(16) Resolve supply deficiencies.
(17) Review and direct changes to the technical and ready reference libraries.

Performance Standard. Requirements must in compliance with orders and directives governing programs.

Prerequisite. None.

PPP-405 24 Z E N/A L

Goal. Manage fiscal requirements.

Requirement. SNM will complete the tasks listed in accordance with local and higher echelon fiscal programs:

(1) Conduct mid year review of fiscal requirements.
(2) Submit, review, and adjust activity based costing (ABC) data.
(3) Identify and submit fiscal requirements.
(4) Monitor expenditures.
(5) Conduct year end reconciliation.

Performance Standard. Requirement completion must be in accordance with local and higher echelon fiscal support programs.

Prerequisite. None.

PPP-406 24 Z E N/A L

Goal. Manage administrative procedures.

Requirement. SNM will complete the tasks listed in accordance with local and higher echelon fiscal programs:

(1) Establish, review, and update record keeping procedures.
(2) Establish, review, and update quality assurance program.
(3) Establish, review, and update safety program.
(4) Establish, review, and update publication library.
(5) Establish, review, and update training programs.
(6) Establish, review, and update system management programs.
(7) Establish, review, and update desktop procedures.
(8) Establish, review, and update standing operating procedures.
(9) Establish, review, and update forecasters handbook.
(10) Establish, review, and update security program.
(11) Establish, review, and update supply program.
(12) Establish, review, and update network procedures.
(13) Establish, review, and update METOC database procedures.
(14) Establish, review, and update turnover binders.

Performance Standard. Requirement completion must be in accordance with local and higher echelon administrative programs.

Prerequisite. None.

PPP-407 24 Z E N/A L

Goal. Identify METOC support issues.

Requirement. SNM will draft and submit the reports to identify METOC support issues:

(1) Validate and submit Joint Universal Lessons Learned Summary (JULLS) report.
(2) Validate and submit METOC After Action Reports.
(3) Validate and submit Marine Corps Lessons Learned System (MCLLS) reports.
(4) Validate and submit Mission Needs Statements (MNS) reports.
(5) Validate and submit Universal Needs Statement (UNS) reports.

Performance Standard. Content and format will be in accordance with orders and directives governing the report.

Prerequisite. None.

PPP-408 24 Z E N/A L

Goal. Manage METOC equipment requirements.

Requirement. SNM will conduct the following tasks to enhance knowledge of managing METOC equipment:

(1) Identify, submit, and coordinate METOC equipment requirements.
(2) Identify, submit, and coordinate on METOC equipment maintenance requirements.
(3) Validate table of allowances.
(4) Establish local concept of operations.
(5) Coordinate and supervise testing of new technologies.

Performance Standard. Requirements must meet standards set forth by orders and directives.

Prerequisite. None.

PPP-409 6 Z E N/A L

Goal. Manage garrison Doppler radar operations.

Requirement. SNM will complete the tasks listed to gain proficiency in management of Doppler radar techniques:

(1) Establish and coordinate background maps with radar operation center.
(2) Coordinate Doppler radar maintenance.
(3) Identify and implement software and hardware configurations.
(4) Identify and configure radar user functions.
(5) Establish radar regular and limited access adaptation data.

(6) Participate in unit radar committee meetings.
(7) Establish radar alerts and thresholds.
(8) Establish one time product request procedures.
(9) Establish radar product set lists.
(10) Establish dedicated and non-associated radar product generator (RPG) lists.
(11) Set radar system clock.

Performance Standard. Completion of requirement must not violate local or RDA system integrity.

Prerequisite. None.

PPP-410 24 Z E N/A L

Goal. Perform the supervisory functions within METOC service.

Requirement. Perform the administrative functions listed to ensure mission capable status of equipment and personnel within the Weather Service Section:

(1) Conduct pre-deployment inspection.
(2) Supervise training of weather service personnel.
(3) Review standing operating procedures.
(4) Review desktop procedures.
(5) Prepare naval message traffic.
(6) Review and implement embarkation procedures.
(7) Ensure directives tracking and filing convention are adhered to.
(8) Ensure security procedures are adhered to.
(9) Ensure clearance documentation is completed and tracked.
(10) Assignment and supervision of mentors.
(11) Assignment and supervision of collateral duties.
(12) Supervision of certification of personnel are properly documented and tracked.
(13) Develop and supervise METOC databases.
(14) Configure and manage METOC networks.
(15) Prepare watch schedule.
(16) Prepare recall roster.
(17) Conduct annual survey.
(18) Review monthly records transmittal.
(19) Submit morning report.
(20) Coordinate personnel strengths.
(21) Submit work requests.
(22) Prepare QDRs.
(23) Monitor supplies and requisition accounts.
(24) Review and identify deficiencies in the TBA, ULSS.
(25) Establish and monitor a quality assurance program.

Performance Standard. Requirements must meet standards set forth by orders and directives.

Prerequisite. None.

PPP-411 24 Z E N/A L

Goal. Enhance quality of METOC products through the development, implementation and tracking of a robust QA program.

Requirement. Develop, implement and track the results of a quality assurance program.

Performance Standard. Content of the quality assurance program will include at a minimum:

(1) Observational elements.
(2) Forecast elements.
(3) PIREPs.
(4) WEAXs.
(5) Daily forecasts.
(6) Local derived mission required products.

Prerequisite. None.

PPP-412 24 Z E N/A L

Goal. Develop and perform administrative meteorological network functions.

Requirement. Conduct development and administration of METOC networks to ensure operability and functionality while ensuring network security:

(1) Garrison networks.
    (a) Establishment of network connectivity.
    (b) Request for and/or assignment of IPs.
    (c) Request for and/or assignment of paths.
    (d) User account administration.
    (e) Folder and server security permissions.
    (f) Establish METOC databases.
    (g) Logon and passwords for server applications.
    (h) Naming conventions.
(2) FMF networks.
    (a) Establishment of network.
    (b) Request for IPs.
    (c) Assignment of IPs.
    (d) Assignment of network paths.
    (e) Router configurations.
    (f) Encryption configurations.
    (g) User account administration.
    (h) Folder and server security permissions.
    (i) Establish METOC databases.
    (j) Logon and passwords for server applications.
    (k) File naming conventions.

Performance Standard. Requirement to be complete without violation of network connectivity and security.

Prerequisite. None.

PPP-413	24	Z	E	N/A	L

Goal. Develop and coordinate procedures for the embarkation and operation of the MetMF(R).

Requirement. Given a 24-hour period for embarkation, and 12-hour period for setup, develop and coordinate embarkation plans to embark the MetMF(R) to a designated area of operation:

(1) Establish and coordinate a communications package.
(2) Establish and coordinate fly-out plan.
(3) Establish and coordinate a HAZMAT plan.
(4) Establish and coordinate security Plan.
(5) Physical security.
(6) Data security.
(7) Establish and coordinate logistic support package.
(8) Establish and coordinate METOC support package.
(9) Establish and coordinate HERP and HERF package.
(10) Conduct a site survey (if applicable).
(11) Establish and coordinate fly-on support package
(12) Establish and coordinate regional and local system interoperability requirements.
(13) Monitor and supervise utilization of equipment.
(14) Monitor and supervise setup procedures.
(15) Coordinate heavy equipment and facilities support.
(16) Establish personnel requirements commensurate with support requirements.

Performance Standard. Requirement to be completed fully briefed within a 24 hour period.

Prerequisite. None.

240. INSTRUCTOR QUALIFICATION TRAINING

1. Formal Schools Instructor (FSI)

a. Purpose. To qualify instructors at METOC Formal schools.

b. General

(1) Administrative Notes. Training shall be conducted at Keesler, Air Force Base, Mississippi. Course number for the Basic instructor course is E3AIR3S200.

(2) Prerequisite

(a) Minimum of 3 years in operational METOC forecasting.

(b) Minimum of 2 years in an operational METOC impact assessment billet.

(c) Top Secret clearance.

(d) Rank of Sergeant through Master Gunnery Sergeant.

(e) Assignment to syllabus.

(3) Refresher Training. Refresher events shall be completed annually as per Subject Matter Qualification or when assigned by the course supervisor.

(4) Stage end performance. Upon completion of this stage of the syllabus the Journeyman METOC Analyst shall have knowledge of techniques of military instruction and eligible for qualification as a METOC Analyst Instructor. Completion of MAI-610 event required for qualification.

c. Crew Requirements. Qualified Journeyman METOC Analyst and qualified Formal Schools Instructor.

d. Academic Training. Academic training events are graded and tracked at the administering unit. Supplemental training events and training packages are highly encouraged.

e. Event Training

FSI-500	150	Z	E	N/A	L

Goal. Attend Basic Instructors Course (BIC).

Requirement. Complete the BIC or refresher BIC.

Performance Standard. Complete the Basic Instructor Course (by successfully passing all written measurements with at least a 70% proficiency and pass all progress checks with 75% proficiency.

Prerequisite.

(1) Minimum of 3 years in operational METOC forecasting.
(2) Minimum of 2 years in an operational METOC impact assessment billet.
(3) Top Secret clearance.
(4) Rank of Sergeant through Master Gunnery Sergeant.

FSI-501	150	Z	E	N/A	L

Goal. Complete instructor certification process.

Requirement.

(1) Observe course curriculum.
(2) Pass required tests and progress checks.
(3) Instruct under supervision.

Performance Standard. SNM must achieve 100 % proficiency on all measurements and progress checks.

Prerequisite. FSI-500.

FSI-502	6.0	Z	E	N/A	L

Goal. Complete annual re-qualification.

Requirement. Successfully complete annual re-qualification testing and receive satisfactory instructor evaluations.

Performance Standard. Achieve 100% proficiency on written test and progress checks for each block of instruction.

Prerequisite. FSI-501.

FSI-503	75	Z	E	N/A	L

Goal. Complete supplemental instructor training.

Requirement. Successfully complete supplemental instructor training:

(1) Objectives and test course.
(2) Instructional system development process.
(3) Instructor supervisor course.
(4) Technical Writer 1&2.

Performance Standard. Achieve 100% proficiency on written test and progress checks for each block of instruction.

Prerequisite. FSI-500and FSI-501.

FSI-504	75	Z	E	N/A	L

Goal. Complete master training specialist program.

Requirement. To instruct the MOAF course the instructor must successfully complete training program.

Performance Standard. Achieve 100% proficiency on written test and successfully complete board.

Prerequisite. FSI-500 through FSI-503 inclusive.

2. METOC Analyst Instructor (MAI)

a. Purpose. The purpose of is stage of the train personnel to become instructors and mentors at local METOC commands.

b. General

(1) Administrative Notes. Training shall be conducted at local METOC unit.

(2) Prerequisites

(a) Minimum 3 years in operational METOC forecasting.

(b) Top Secret clearance.

(c) Rank of Sergeant through Master Gunnery Sergeant.

(d) Assignment to syllabus.

(3) Refresher Training. Refresher events shall be completed annually per Subject Matter Qualification or when assigned.

(4) Stage end performance. Upon completion of this stage of the syllabus, the Journeyman METOC Analyst shall have knowledge of techniques of military instruction and eligible for qualification as a METOC Analyst Instructor. Completion of DES-613 event denotes qualification.

c. Crew Requirements. Qualified Journeyman METOC Analyst and qualified METOC Analyst Instructor.

d. Academic Training. Academic training events are developed, graded and tracked at the administering unit.

e. Event Training

MAI-510	108	Z	E	N/A	L

Goal. To certify knowledge of METOC subjects.

Requirement. METOC Analyst Instructor Under Training shall be required to complete all level 100 Journeyman METOC Analyst certification events (JCP coded events). The METOC Analyst Instructor Under Training shall prepare and present periods of instruction for all JCP events.

Performance Standard. The Master METOC Analyst or METOC Officer shall evaluate the instructor under training on class presentation and knowledge of subject and provide recommendation to the designating authority for MAI designation.

Prerequisite. Rank of Sergeant or above; completion of all level 200 through 300 events; completed NCO resident or non-resident course.

MAI-511	5	Z	E	N/A	L

Goal. To certify the knowledge of techniques of military instruction for instructor/mentorship designation.

Requirement. Exhibit comprehensive knowledge of the techniques of military instruction by conducting 5 periods of instructions (chosen by the METOC Chief) evaluated by the METOC Chief and/or METOC Officer.

Performance Standard. Marine must be exhibit knowledge of the selected subjects, counseling, and techniques of military instruction.

Prerequisite. MAI 510; Rank of Staff Sergeant or above; completion of all JMA 300 events; completed SNCO resident or non-resident course.

250. REQUIREMENTS, QUALIFICATIONS AND DESIGNATIONS

1. Requirements

a. Purpose. This stage of the syllabus is provide tracking codes for events required throughout the syllabus.

b. General. Completion of the events will not result in an increase in Combat Readiness Percentage and are used for tracking of the requirements.

c. Crew Requirements. METOC Chief, METOC Officer and subject marine.

d. Requirement Event(s)

FCC-600	xx	Z	E	N/A	L

Goal. Complete advanced informal Naval/METOC correspondence courses.

Requirement. Utilizing the proper grading authority, complete the designated courses within the specified time allotted.

Performance Standard. Complete the following courses:

(1) Within 6 months of forecaster certification, complete:
   (a) NAVEDTRA 14010, AG-1&C.
   (b) The Forecast process, CBT.
   (c) METOC 50-1T-9607, Tropical streamline analysis.

(2) 6-12 months of forecaster certification, complete:
   (a) METOC 50-1T-9602, Operational Oceanography II.
   (b) METOC 50-1T-9603, Operational Oceanography III.
   (c) METOC 50-1B-0001, Water Vapor Imagery.
   (d) METOC 50-1T-9610, Satellite Imagery, Tropical cloud workbook.
   (e) METOC 50-1T-9604, Tropical Synoptic Models.
   (f) NAVOCEANO Comet, Satellite Meteorology case studies.
   (g) NAVOCEANO Comet, Satellite Meteorology remote sensing.

(3) 12-18 months of Forecaster certification, complete:
   (a) NAVOCEANO Comet, A Convective Matrix.
   (b) NAVOCEANO Comet, Convective Strom Structure and Evolution.
   (c) NAVOCEANO Comet, Fire Weather.
   (d) MCI 25.15, Antenna Construction and Propagation of Radio Waves.

Prerequisite. None.

FCC-601	0	Z	E	N/A	L

Goal. Complete advanced informal Naval/METOC correspondence courses.

Requirement. Utilizing the proper grading authority, complete the designated courses within the specified time allotted. (Training can be completed via web learning or CBT).

Performance Standard. Complete the following courses:

(1) Within 2 years of JMA certification, complete:
(a) WinNT 4.0 – “Managing Users and Groups”.
(b) WinNT 4.0 – “Sharing and Securing Network resources”.
(c) WinNT 4.0 – “Network Configurations”.
(d) WinNT 4.0 – “Troubleshooting and Optimization”.
(e) WinNT 4.0 – “Subnet Addressing, IP Routing and Browsing”.

(2) Within 3 years of JMA certification, complete:
(a) Web A&P – “Creating HTML”.
(b) Web A&P – “Creating Fill in Forms”.
(c) Web A&P – “Advanced HTML Links”.

Prerequisite. None.

FCC-602 0 Z E N/A L

Goal. Tracking code event for security manager’s course.

Requirement. In accordance with predefined standards, successfully complete the Security’s Manager’s course.

Performance Standard. IAW with references.

Prerequisite. None.

FCC-603 0 Z E N/A L

Goal. (Not Active) Tracking code event for METOC chief’s course.

Requirement. In accordance with predefined standards, successfully complete the METOC Chief’s course.

Performance Standard. IAW with references.

Prerequisite. None.

FCC-604 0 Z E N/A L

Goal. Tracking code for tropical weather analysis course.

Requirement. In accordance with predefined course standards, successfully complete the Tropical Weather Analysis Course.

Performance Standard. Certification of completion received upon completion of the requirement.

Prerequisite. None.

FCC-605 0 Z E N/A L

Goal. Tracking code for WSR88D radar manager’s course.

Requirement. In accordance with predefined course standards, successfully complete the Radar Manager Course.

Performance Standard. Certification of completion received upon completion of the requirement.

Prerequisite. None.

FCC-606 0 Z E N/A L

Goal. Tracking code for joint METOC tactical application course.

Requirement. In accordance with predefined course standards, successfully complete the Joint METOC Tactical Application Course.

Performance Standard. Certification of completion received upon completion of the requirement.

Prerequisite. None.

2. Journeyman METOC Analyst Qualification

a. Purpose. This stage of the syllabus is to qualify Journeyman METOC Analysts upon completion of certification events.

b. General

(1) Administrative Notes. Completion of the events will not result in an increase in Combat Readiness Percentage and are used for tracking of the qualification.

(2) Prerequisite. Completion of all level 100 stages of training.

(3) Stage end performance. Upon completion of this stage of the syllabus the Journeyman METOC Analyst shall have obtained the Journeyman METOC Analyst certifications and qualification.

c. Crew Requirements. METOC Chief, METOC Officer and subject Marine.

d. Qualification Event

JCP-607 108 Z E N/A L

Goal. Attain certification of cores skills required for Journeyman METOC Analyst qualification.

Requirement. Utilizing Appendix F, local certification requirements, question and answer periods, exhibit knowledge of the core skills required. Upon completion of the certification checklist, the marine shall be the subject of a certification board (JMA-608) to discern proficiency in the core skills required for JMA qualification.

Performance Standard. SNM must complete the Appendix F under the training of a MAI and be recommended for qualification.

Prerequisite. None.

JCP-608	6	Z	E	N/A	L

Goal. Attain Journeyman METOC Analyst qualification.

Requirement. SNM will be the subject of a formal certification board comprised of, at a minimum, the Master METOC Analyst or, the METOC Officer, and assigned instructor and one qualified JMA.

Performance Standard. SNM will be required to respond in a professional and technically correct manner to questions posed in a formal certification board.

Prerequisite. JCP-607; Completion of the certification checklist.

3. Master METOC Qualification

a. Purpose. This stage of the syllabus is to qualify Master METOC Analysts.

b. General

(1) Administrative Notes. Completion of the events will not result in an increase in Combat Readiness Percentage and are used for tracking of the qualification.

(2) Prerequisite. Completion of all level 400 stages of training.

(3) Stage end performance. Upon completion of this stage of the syllabus the Journeyman METOC Analyst shall receive the Master METOC Analyst Qualification.

c. Crew Requirements. Master METOC Analyst, METOC Officer and subject marine.

d. Qualification Event

MMA-609	6	Z	E	N/A	L

Goal. Attain Master METOC Analyst qualification.

Requirement. Successfully complete and demonstrate proficiency in the following:

(1) Apprentice and Journeyman duties.
(2) Joint and MEF support events.
(3) METOC management and supervision events.

Performance Standard. SNM must complete all prerequisites and be recommended by a Master METOC Analyst and/or METOC Officer.

Prerequisite. Rank of GySgt or above, minimum of 12 years time in service, completion of all JMA 100-400 events, completion of JMA 608 event.

4. Formal Schools Instructor Qualification

a. Purpose. This stage of the syllabus is to qualify personnel as formal school instructor.

b. General

(1) Administrative Notes. Completion of the events will not result in an increase in Combat Readiness Percentage and are used for tracking of the qualification.

(2) Prerequisite. Completion of all level 500 formal school instructor certification events.

(3) Stage end performance. Upon completion of this stage of the syllabus the Journeyman METOC Analyst shall have knowledge of techniques of military instruction and eligible for qualification as a Formal Schools Instructor.

c. Qualification Events

FSI-610	2	Z	E	N/A	L

Goal. Attain formal schools instructor (FSI) qualification.

Requirement. Upon completion of the academic training, the Marine shall be the subject of a certification board to discern proficiency in the core skills required for FSI qualification.

Performance Standard. Must exhibit knowledge of techniques of military instruction per the BIC course.

Prerequisite. FSI–500;FSI-501.

4. METOC Analyst Instructor Qualification

a. Purpose. This stage of the syllabus is to qualify personnel as METOC Analyst instructors.

b. General

(1) Administrative Notes. Completion of the event(s) will not result in an increase in Combat Readiness Percentage and are used for tracking of the qualification.

(2) Prerequisite. Completion of all level 500 formal school instructor certification events.

(3) Stage end performance. Upon completion of this stage of the syllabus the Journeyman METOC Analyst shall have knowledge of techniques of military instruction and eligible for qualification as a METOC Analyst Instructor.

c. Qualification Events

MAI-611	0	Z	E	N/A	L

Goal. Attain METOC analyst instructor (MAI) qualification.

Requirement. Under the mentorship of a qualification MAI, be designated as a METOC Analyst instructor.

Prerequisite. Rank of SSgt or above; completion of all level 300 events; and MAI-510 and MAI-511.

5. Designations

a. Purpose. This stage of the syllabus is to designate personnel based on leadership qualities of the individual.

b. General. Completion of the events will not result in an increase in Combat Readiness Percentage and are used for tracking of the

c. Designating Events

DES-612	0	Z	E	N/A	L

Goal. Attain METOC Chief designation.

Requirement. Successfully complete and demonstrate proficiency in all level 400 events, exhibit exceptional leadership capabilities, and receive recommendation for designation by the appropriate authority.

Performance Standard. SNM must complete/meet all prerequisites and be recommended by appropriate authority.

Prerequisite. Rank of SSgt or above; completion of all JMA 400 events; completion of MMA-607,MMA-608.

DES-613	0	Z	E	N/A	L

Goal. Attain METOC Section Leader designation.

Requirement. Under the mentorship of a designated METOC Section Leader, successfully complete and demonstrate proficiency all level 300 level events and receive recommendation for designation by Master METOC Analyst and/or METOC Officer.

Performance Standard. SNM must complete all prerequisites and be recommended by a Master METOC Analyst and/or METOC officer.

Prerequisite. Rank of SSgt or above; completion of all level 300 events.

280. EVENT CRP/HOURS/REFRESH BREAKDOWN. Tables 2-9 through 2-13 at the end of chapter provides a listing of the events, hours and combat readiness percentage for each stage of the syllabus.

Table 2-9.—-Combat Capable Event Breakdown.

Combat Capable Training Events (Events, Hours, Refresh and CRP)					
STAGE	**CODE**	**HRS**	**Interval**	**CRP**	**Notes**
FAM	100	94	NA	1.2	
FAM	101	108	NA	1.2	
FAM	102	90	NA	1.2	
FAM	103	90	NA	1.2	
FAM	104	80.5	NA	1.2	
FAM	105	24	NA	1.2	
FAM	106	24	NA	1.2	
FAM	107	24	NA	1.2	
FAM	108	65	NA	1.2	
FAM	109	65	NA	1.2	
FAM	110	128.5	NA	1.2	
FAM	111	70.5	NA	1.2	
FAM	112	68.5	NA	1.2	
FAM	113	24	NA	1.2	
FAM	114	24	NA	1.2	
FAM	115	36	NA	1.2	
FAM	116	40	NA	1.2	
FAM	117	24	NA	1.2	
FAM	118	24	NA	1.2	
FAM	119	64	NA	1.2	
FAM	120	48	NA	1.2	
JCP	121	2	NA	1.2	
JCP	122	2	NA	1.2	
JCP	123	1	NA	1.2	
JCP	124	1	NA	1.2	
JCP	125	3	NA	1.2	
JCP	126	5	NA	1.2	
JCP	127	6	NA	1.2	
JCP	128	1	NA	1.2	
JCP	129	.5	NA	1.2	
JCP	130	.5	NA	1.2	
JCP	131	.5	NA	1.2	
JCP	132	3	NA	1.2	
JCP	133	1	NA	1.2	
JCP	134	2	NA	1.2	
JCP	135	.5	NA	1.2	

Table 2-9.—-Combat Capable Event Breakdown--Continued.

STAGE	CODE	HRS	Interval	CRP	Notes
JCP	136	.5	NA	1.2	
JCP	137	3	NA	1.2	
JCP	138	16	NA	1.2	
JCP	139	2.5	NA	1.2	
JCP	140	5	NA	1.2	
JCP	141	4	NA	1.2	
JCP	142	10	NA	1.2	
JCP	143	2	NA	1.0	
JCP	144	5	NA	1.0	
JCP	145	.5	NA	1.0	
JCP	146	30	NA	1.0	
JCP	147	8	NA	1.0	
JCP	148	2	NA	1.0	
CMO	149	1.5	365	1.2	
CMO	150	24	365	1.2	
		1359		60	

Table 2-10.—-Combat Ready Event Breakdown.

Combat Ready Training Events (Events, Hours, Refresh and CRP)					
STAGE	CODE	HRS	Interval	CRP	Notes
FAM	200	1	NA	.25	
FAM	201	1	NA	.25	
FAM	202	.5	NA	.25	
FAM	203	3	NA	.25	
FAM	204	1	NA	.25	
FAM	205	6	NA	.25	
FAM	206	6	NA	.25	
FAM	207	2	NA	.25	
FAM	208	.5	NA	.25	
FAM	209	2	NA	.25	
FAM	210	2	NA	.25	
FAM	211	1	NA	.25	
FAM	212	2	NA	.25	
PPP	213	1	NA	.25	
PPP	214	5	NA	.25	
PPP	215	3	NA	.25	
PPP	216	1	180	.25	
PPP	217	8	NA	.25	
PPP	218	2	NA	.25	

Table 2-10.—-Combat Ready Event Breakdown--Continued.

PPP	219	1	NA	.25	
PPP	220	56	NA	.25	
PPP	221	2	NA	.25	
PPP	222	.5	NA	.25	
PPP	223	.5	365	.25	
CMO	224	32	365	.25	
CMO	225	240	365	.25	
CMO	226	16	180	.25	
CMO	227	24	NA	.25	
CMO	228	2	365	.25	
CMO	229	30	365	.25	
CMO	230	6	365	.25	
CMO	231	1	365	.25	
CMO	232	.5	180	.25	
CMO	233	40	365	.25	
CMO	234	6	365	.25	
CMO	235	24	365	.25	
MIA	236	80	NA	.25	
MIA	237	3	NA	.25	
MIA	238	2	365	.25	
MIA	239	3	365	.25	
MIA	240	3	365	.25	
MIA	241	3	180	.25	
MIA	242	3	365	.25	
MIA	243	3	365	.25	
MIA	244	3	365	.25	
MIA	245	3	365	.25	
MIA	246	3	365	.25	
MIA	247	3	365	.25	
EQP	248	24	180	.25	
EQP	249	8	180	.25	
EQP	250	1	365	.25	
EQP	251	1	180	.25	
EQP	252	3	90	.25	
EQP	253	3	90	.25	
EQP	254	16	365	.25	
EQP	255	24	90	.25	
EQP	256	8	365	.25	
EQP	257	24	365	.25	
EQP	258	24	180	.25	
EQP	259	24	90	.25	

Table 2-11.-—Combat Qualification Event Breakdown.

Combat Qualified Training Events (Events, Hours, Refresh and CRP)					
STAGE	**CODE**	**HRS**	**Interval**	**CRP**	**Notes**
PPP	300	56	365	1.2	
PPP	301	3	NA	1.2	
PPP	302	6	365	1.2	
PPP	303	56	365	1.2	
PPP	304	24	NA	1.2	
PPP	305	24	NA	1.2	
CMO	306	24	NA	1.2	
CMO	307	24	NA	1.2	
CMO	308	24	NA	1.2	
CMO	309	16	NA	1.2	
CMO	310	24	365	1.2	
MIA	311	24	180	1.2	
EQP	312	16	NA	1.2	
EQP	313	24	NA	1.2	
EQP	314	24	NA	1.2	
EQP	315	6	180	1.2	
EQP	316	48	365	1.2	
		423		20	

Table 2-12. Full Combat Qualification Event Breakdown.

Full Combat Qualified Training Events (Events, Hours, Refresh and CRP)					
STAGE	**CODE**	**HRS**	**Interval**	**CRP**	**Notes**
PPP	400	51	360	.31	
PPP	401	51	NA	.31	
PPP	402	51	NA	.31	
PPP	403	24	NA	.31	
PPP	404	24	NA	.30	
PPP	405	24	NA	.39	
PPP	406	24	NA	.39	
PPP	407	24	NA	.39	
PPP	408	24	NA	.39	
PPP	409	6	NA	.38	
PPP	410	24	NA	.38	
PPP	411	24	NA	.38	
PPP	412	24	NA	.38	
PPP	413	24	NA	.38	
				5	

Table 2-13.—-Instructor Events Breakdown.

Instructor Training Events (Events, Hours, Refresh and CRP)					
STAGE	**CODE**	**HRS**	**Interval**	**CRP**	**Notes**
FSI	500	150	NA	0	
FSI	501	150	NA	0	
FSI	502	6	365	0	
FSI	503	75	NA	0	
FSI	504	75	NA	0	
MAI	510	108	NA	0	
MAI	511	5	365	0	
TOTALS		569		0	

Table 2-14.--Requirements, Qualifications, and Designations Event Breakdown.

Requirements, Qualification, Designations Events (Events, Hours, Refresh and CRP)					
STAGE	**CODE**	**HRS**	**Interval**	**CRP**	**Notes**
FCC	600	*	NA	0	Completion certificates required
FCC	601	*	NA	0	Completion certificates required
FCC	602	80	365	0	Completion certificates required
FCC	603	80	NA	0	Completion certificates required
FCC	604	80	NA	0	Completion certificates required
FCC	605	80	NA	0	Completion certificates required
FCC	606	80	NA	0	Completion certificates required
JCP	607	160	NA	0	Certification checklist required
JCP	608	8	NA	0	Requires authority letter
MMA	609	8	NA	0	Requires authority letter
FSI	610	1.5	NA	0	Requires authority letter
MAI	611	8	NA	0	Requires authority letter
DES	612	1.5	365	0	Requires authority letter
DES	613	1.5	NA	0	Requires authority letter
TOTALS		588.5			

290. EVENT CHAINING. Tables 2-15 at the end of chapter provides a listing of the events and chained events.

Table 2-15--Event Chaining Table.

Event	Events Updated
CMO-310	EQP-254
MIA-311	MIA-237; MIA-236; FAM-112
FSI-502	FSI-500; FSI-501
JCP-608	JCP-607
FSI-610	FSI-500; FSI-501
MAI-611	MAI-510; MAI-511

CHAPTER 3

METOC OFFICER
(MOS 6802/6877)

FIGURES

TABLES

CHAPTER 3

METOC OFFICER
(MOS 6802/6877)

300. CORE COMPETENCIES/SKILLS

1. Meteorological and Oceanographic (METOC) Unit Mission. The mission of the Marine Corps METOC Unit is to provide meteorological, oceanographic, and space environmental information, products, and services required in support of joint, combined, and Marine Corps operations as directed.

2. Mission Essential Task List (METL)

a. Collect, record, and disseminate METOC parameters in support of joint, combined, and Marine Corps operations.

b. Analyze, evaluate, and forecast METOC parameters in support of joint, combined, and Marine Corps operations.

c. Assess and disseminate METOC impacts to weapons systems in support of joint, combined, and Marine Corps operations.

3. METOC Core Capability

a. Core competent aviation METOC units are capable of:

(1) Supporting continuous (24/7) aviation operations based from a Forward Operating Base (FOB) with remote atmospheric sensing capabilities for up to two Forward Arming And Refueling Points (FARP).

(2) Providing continuous (24/7) environmental support to CONUS and OCONUS garrison Marine Corps Air Stations and Facilities in the form of seamless METOC surface and upper air observations and forecasts out to 96 hours.

(3) Providing timely and accurate weather warnings to local bases and stations for protecting resources.

b. Core competent METOC Support Teams (MST) are capable of:

(1) Providing continuous METOC support to non-aviation elements of the MAGTF during planning, execution, and debrief of all missions.

(2) Providing mission and task organized, rapidly deployable METOC capabilities that enhance the unit commander's ability to exploit the environment and facilitate mission success.

301. PROGRAMS OF INSTRUCTION (POI) FOR BASIC METOC OFFICER

WEEKS	COURSE/PHASE	ACTIVITY
39-61	COMBAT READY TRAINING	LOCAL METOC
62-79	COMBAT QUALIFICATION TRAINING	LOCAL METOC
80-WC	FULL COMBAT QUALIFICATION TRAINING	LOCAL METOC

302. SUMMARY/INDEX OF LIVE/SIMULATED EVENTS. Tables 3-1 thru 3-3 contains a listing of the Apprentice METOC Analyst's Combat Capable, Combat Ready, Combat Qualification and Full Qualification training events with associated page numbers.

Table 3-1.—-METOC Officer Combat Ready Events.

EVENT	GOAL	PAGE
FAM-200	Understand equipment casualties reporting procedures	3-10
OPS-201	Submit meteorological support requirements to communications annex of an operations order	3-11
OPS-202	Submit meteorological support requirements to the intelligence annex of an operations order	3-11
ADM-203	Understand the maintenance, management and material processes of the meteorological mobile facility replacement (METMF(R))	3-12
ADM-204	Consolidate customer support requirements	3-12

Table 3-2.--METOC Officer Combat Qualified Events.

EVENT	GOAL	PAGE
ADM-300	Identify doctrinal, equipment and training deficiencies	3-13
ADM-301	Verify and submit a quality deficiency report (QDR)	3-13
ADM-302	Identify and submit fiscal requirements	3-13
ADM-303	Develop standard operating procedures and desktop procedures	3-14
ADM-304	Conduct and evaluate pre-deployment screenings and inspections	3-14
ADM-305	Provide information for base engineering site evaluation plan (BESEP) equipment studies	3-14
ADM-306	Establish and maintain liaison with other services	3-15
ADM-307	Brief meteorological and oceanographic (METOC) capabilities	3-15
ADM-308	Support staff planning	3-15
OPS-309	Develop meteorological and oceanographic annex H for an operation order	3-16
SEC-310	Establish a security program	3-16
TRN-311	Establish and conduct certification program for METOC personnel	3-17
TRN-312	Establish and conduct tower visibility certification procedures for air traffic control personnel	3-17
TRN-313	Establish a meteorological and oceanographic training program to satisfy MAGTF METOC support requirements	3-17

Table 3-3.--METOC Officer Full Combat Qualified Events.

EVENT	GOAL	PAGE
ADM-400	Conduct a meteorological and oceanographic staff study for each new DOD weapon system	3-18
OPS-401	Perform duties as a Joint/Combined METOC Officer	3-18
OPS-402	Perform duties as a Marine Forces (MARFOR) Staff METOC Officer	3-19
TRN-403	Provide Marine Aviation Weapons and Tactics instruction	3-19
TRN-404	Establish and conduct a Weapons and Tactics Training Program	3-20

303. SUMMARY/INDEX OF INSTRUCTOR TRAINING EVENTS. Table 3-4 contains a listing of the events for weapons tactics instructor qualification.

Table 3-4.—-Instructor Training Events.

EVENT	GOAL	PAGE
WTI-500	Weapons and Tactics instructor training	3-20

304. SUMMARY/INDEX OF REQUIREMENTS/DESIGNATIONS AND QUALIFICATIONS. Table 3-5 contains a listing of the events for requirements, qualifications, and designations with associated page numbers.

Table 3-5.--Requirements, Qualification and Designation List.

EVENT	GOAL	PAGE
WTI-600	Tracking code for Weapons and Tactics Instructor qualifications	3-21

310. ACADEMIC TRAINING

1. General. Meteorological and oceanographic support revolves around products derived from raw data that is plotted, analyzed, and interrogated using analytical rigor based on knowledge and application of meteorological theories, rules of thumb and computer model algorithms. In order to become proficient within the METOC structure, all 6800 personnel receive extensive academic training in meteorological and oceanographic sciences.

2. Prerequisites. The Military Occupational Specialties (MOS) manual denotes the academic pre-requisites (GT and EL scores) for initial ascension into the MOS.

3. Security. All personnel assigned the 6802 MOS are required to be eligible for Top Secret clearance per the MOS manual.

4. Academic training. Formal academic training courses are required to ensure uniform levels of training in core competencies and skills. Formal schools are schools that receive Navy and Marine Corps educational funding and have approved syllabuses.

a. Coding

(1) Formal schools are coded by the Course Identification Number (CIN) for Navy courses and Course Identification (CID) for Marine Corps courses.

(2) Informal course materials are coded to facilitate inclusion in the events.

b. Formal courses required for completion of this Basic Program of instruction (POI) are:

(1) Weapons Tactics Instructor (WTI) Course.

(2) A listing of academic courses available to enhance the syllabus or required to complete the syllabus are listed in Appendix A.

5. References. Appendix B contains a listing of references utilized in the development of the training and readiness syllabus. Individual training events require adherence to the references contained within the table. Due to the comprehensive nature of the events, extensive references, and rapid changing content, including references in each event would not be prudent.

320. EVENT TRAINING

1. Progression model. Figure 3-1 depicts the training progression model for the 6802/6877 MOS.

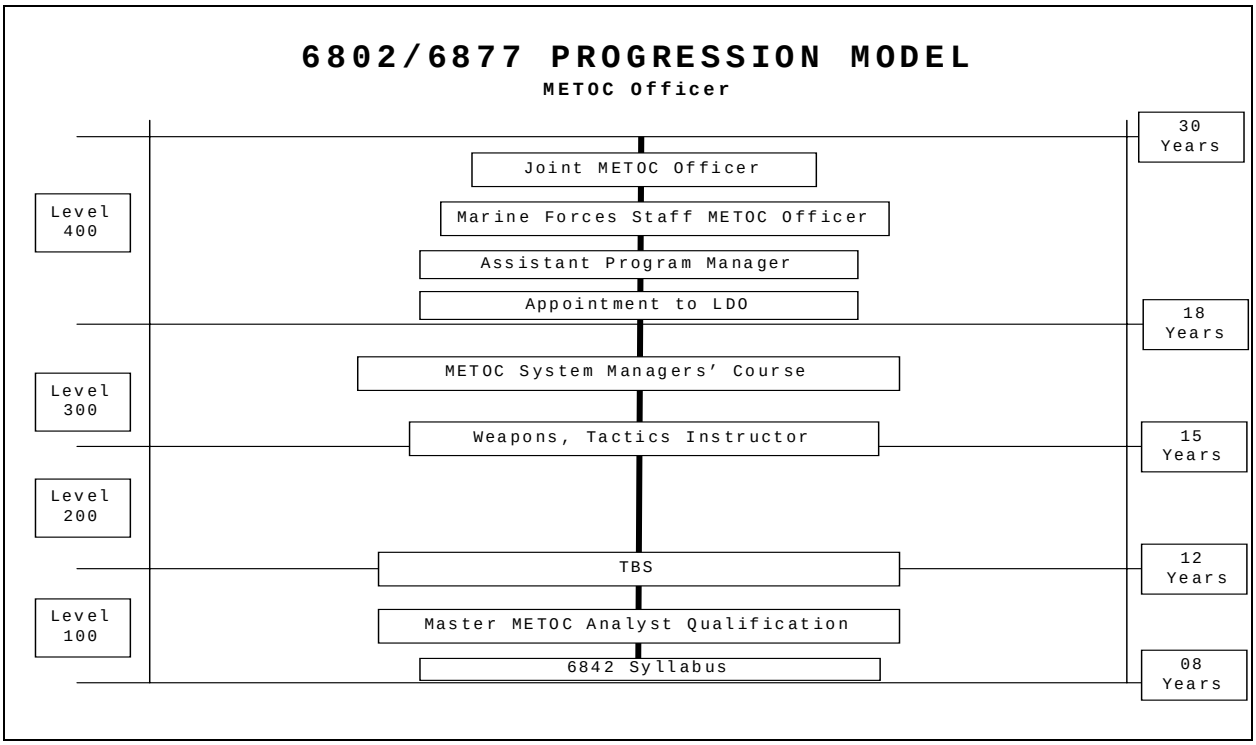


Figure 3-1.--Progression Model for METOC Officers.

2. METOC Officers transition from the 6842 MOS, the attainment of 'Master METOC Analyst' may not have been achieved. It is imperative that the new Warrant Officer, as an OccFld subject matter expert, completes the 100-400 level goals of the 6842 that were not previously completed. All the 6842 100-400 level goals are identified as 6802 200 level goals. This proficiency significantly increases the readiness of the unit and the capability and flexibility of the METOC section. Upon completion of the 6802 200 level goals, the METOC Officer may be assigned to Marine Aviation Weapons and Tactics course.

321. EVENT/CRP. Table 3-6 provides a listing of the events, hours and combat readiness percentage for each stage of the syllabus.

Table 3-6.--Event/CRP Breakdown Table.

COMBAT READY STAGE OF TRAINING			
STAGE	**EVENTS**	**HOURS**	**PERCENT**
Administration (ADM)	2	6	5
Familiarization (FAM)	1	2	5
Operations (OPS)	2	12	5
COMBAT CAPABLE TOTALS:	**5**	**20**	**15**
COMBAT QUALIFICATION STAGE OF TRAINING			
STAGE	**EVENTS**	**HOURS**	**PERCENT**
Administration (ADM)	9	162	5
Operations (OPS)	1	56	5
Security (SEC)	1	24	5
Training (TRN)	3	10	5
COMBAT READY TOTALS:	**14**	**252**	**20**
FULL COMBAT QUALIFICATION STAGE OF TRAINING			
STAGE	**EVENTS**	**HOURS**	**PERCENT**
Administration (ADM)	1	18	5
Operations (OPS)	2	48	5
Training (TRN)	2	7	5
COMBAT QUALIFICATION TOTALS:	**26**	**73**	**15**

330. EVENT PERFORMANCE REQUIREMENTS

1. Purpose

The purpose of training and readiness (T&R) manual events is to enhance combat readiness of METOC units. Core and core plus skills are advanced through the implementation of events, approved by fleet representation, to provide a measurable and chronological advancement of skills.

2. General

a. This manual is written to allow for local requirements and yet remain unclassified. DC AVN and CG MCCDC encourage squadrons to use the full range of tactics in the tactical manuals and adopt the latest in training requirements.

b. Live Training. Training event condition codes listed as **L** (live), **L/S** (live preferred/simulator optional) in this syllabus designate training to be conducted without the aid of simulator devices. Training not conducted in the live training environment shall be replaced with simulation where applicable as indicated in the condition code. A number of the live and simulated events require interaction with external C3 agencies. This interaction/interface is important to the individual, crew, and agency training.

c. Simulator Training. Training event condition codes listed as **S** (simulator), and **S/L** (simulator preferred/live optional) in this syllabus designate training to be conducted as indicated in the condition code. A number of the live and simulated events require interaction with external

agencies. This interaction/interface is important to the individual, crew, and agency training.

3. Evaluation of Training. Evaluation will be conducted by either written/oral examination or a combination of the two means. Operational and system related subjects will be evaluated by practical application means whenever possible. At the commanders' discretion, a Marine may receive credit for task completion through an oral explanation of the steps rather than by performing the task.

4. Implementation

a. Unit commanders are the designating authority. Unit commanders may further delegate designation authority to the METOC Officer in Charge (OIC) or senior Staff Non-commissioned in charge in the absence of an METOC Officer.

b. Events shall be conducted by the designated trainee and administered, evaluated, and documented (once completion) designating authority.

c. Documentation and tracking of event completion and progression will be completed by use of the ATRIMS program and in individual training jackets.

5. COMPONENTS OF A T&R EVENT. An event contained within a T&R Manual is an Individual or collective training standard and the following elements, dependent on the tier in which they are contained:

1/	2/	3/	4/	5/	6/	7/
SAM-XXX	0.5	T,C,R,	E	EQUIP	L/S (NS)	

Goal. State the terminal-learning objective.

Requirement. List the specific tasks for the event; indicate what the crew/individual must accomplish.

Performance Standard. Describe the measurable level of proficiency for that core competency/skill.

Prerequisite. Provides a listing of academic training or other T&R events that must be completed prior to satisfying the task.

External Syllabus Support. A listing or description of the external support requirements that may be required to satisfy the completion of the task. May include range requirements, support aircraft, targets, training devices, or other personnel and equipment.

NOTES:

1/ Events are coded per Appendix B of T&R Manual Administrative Manual.

2/ Projected event duration is furnished as a planning tool.

3/ Denotes the applicable Program of Instruction (Basic POI is understood), Z is reserve, R is refresher.

4/ An "**E**" indicates an Evaluated event.

5/ The equipment or activity subcategory is listed **GE** = Garrison Equipment; **M** = METMF(R); **N** = NITES IV; **C** = Computer System

6/ Requirement Code. **L** = live Training; **S** = simulator training; **L/S** = live preferred/simulator optional; **S/L** = simulator preferred/live optional; **N** = Night; Where contained within **()** denotes optional conditions.

7/ Elements of the events may be deleted if not applicable to the event. (example: External Syllabus Support may be deleted if not required for the event)

6. Event Codes. Table 3-7 provides a listing of event codes.

Table 3-7.--Event Code and Description.

Event Code	Description
ADM	ADMINISTRATIVE
FAM	FAMILIARIZATION
TRN	TRAINING
OPS	OPERATIONS
SEC	SECURITY
MGM	MANAGEMENT

331. COMBAT CAPABLE TRAINING. Development and selection of Warrant Officers from the METOC enlisted community negates the requirement for combat capable training of METOC personnel. METOC officers shall complete all Qualifications and designations contained within Chapter 2 of the METOC T&R manual.

332. COMBAT READY TRAINING

1. Familiarization (FAM)

a. Purpose. To continue the development of advanced METOC knowledge of the principles and concepts relating to METOC operations for a METOC Officer.

b. General. This portion of the Combat Ready Stage of training continues the progression of the Master METOC Analyst designation in addition with the 6802 200 level training goals.

c. Academic Training. Academic training will be conducted prior to and concurrently with required events. An academic training event, once completed, can be credited for follow on training events.

d. Events

FAM-200 2 Z E N/A L

Goal. Understand equipment casualties reporting procedures.

Requirement. Given a meteorological and oceanographic (METOC) equipment casualty, report the equipment casualty to higher headquarters via a naval

message in casualty report (CASREP) format within 24 hours as directed by the reference:

(1) Identify an equipment casualty.
(2) Research reporting procedures.
(3) Draft the casualty report.
(4) Contact the METOC Systems Knowledge Center for initial CASREP reporting and Systems Command notification.
(5) Submit the casualty report for naval message release.
(6) Submit follow-up casualty reports as required.

Performance Standard. CASREP and supplemental reports must be completed in accordance with applicable references.

2. Operations (OPS)

a. Purpose. To continue the development of advanced METOC knowledge of the principles and concepts relating to METOC operations for a METOC Officer.

b. Academic Training. Academic training will be conducted prior to and concurrently with required events. An academic training event, once completed, can be credited for follow on training events.

c. Events

OPS-201	3	Z	E	N/A	L

Goal. Submit meteorological support requirements to communications annex (Annex K) of the operations order.

Requirement. Provide meteorological and oceanographic communications requirements for inclusion to Annex K for a specific operation:

(1) Determine METOC communications requirements based upon Annex H.
(2) Provide METOC communications requirements to the communications officer for inclusion in annex K.

Performance Standard. Must be in accordance with applicable orders and directives.

OPS-202	3	Z	E	N/A	L

Goal. Submit meteorological support requirements to Intelligence Annex (Annex B) of the Operations Order.

Requirement. Provide meteorological and oceanographic climatology study for inclusion to Annex B for a specific operation:

(1) Determine Intelligence climatological requirements based on the intelligence estimate in the warning order.
(2) Provide climatological data to the intelligence officer for inclusion into Annex B.

Performance Standard. Must be in accordance with applicable orders and directives.

3. Administration (ADM)

a. Purpose. To continue the development of administrative knowledge pertaining to METOC support.

b. Events

ADM-203	6	Z	E	N/A	L

Goal. Understand the maintenance, management, and material processes of the MetMF(R).

Requirement. Properly maintain inventory and coordinate requisition and repair of COSAL and TBA items with the MALS:

(1) Verify all METOC equipment on accounts by applicable nomenclature and/or National Stock Numbers (NSN).
(2) Supervise the requisition of replacement equipment/material or documented deficiencies.

Performance Standard. Must be in accordance with applicable orders and directives.

ADM-204	6	Z	E	N/A	L

Goal. Consolidate Customer support requirements.

Requirement. Consolidate METOC support requirements to enhance efficiency and identify deficiencies and provide METOC data and products to satisfy all support requirements:

(1) Identify customer METOC support requirements.
(2) Correlate requirements to METOC support capabilities.
(3) Prioritize and satisfy support requirements.
(4) Incorporate support capabilities in appropriate standard operating procedures/desktop procedures for action by METOC personnel.
(5) Document and forward via the chain of command all requested METOC support requirements not able to be fulfilled.

Performance Standard. Must exhibit the ability to identify and the develop procedures to respond support requests.

333. COMBAT QUALIFICATION TRAINING

1. Administration (ADM)

a. Purpose. To continue the development of administrative knowledge pertaining to METOC support.

b. Events.

ADM-300 24 Z E N/A L

Goal. Identify doctrinal, equipment or a training deficiency.

Requirement. Develop a Universal Needs Statement (UNS) identifying doctrinal, equipment or training deficiencies:

(1) Identify and document support requirements not covered by doctrine.
(2) Develop UNS to satisfy deficiency.
(3) Submit UNS to higher headquarters through the chain of command.

Performance Standard. UNS must be completed in accordance with applicable orders.

ADM-301 24 Z E N/A L

Goal. Verify and submit a Quality Deficiency Report (QDR)

Requirement. Prepare and submit a QDR (Standard Form 360) in accordance with OPNAVINST 4790.2 Vol. 2:

(1) Identify quality deficiencies in METOC equipment.
(2) Prepare the QDR.
(3) Review the QDR for accuracy.
(4) Submit QDR.

Performance Standard. QDR must be in accordance with applicable orders and directives.

ADM-302 56 Z E N/A L

Goal. Identify and Submit Fiscal Requirements.

Requirement. Identify annual projections and mid-year deficiencies and submit locally required reports in support of METOC equipment and operational training requirements:

(1) Identify annual operational fiscal requirements.
(2) Estimate annual costs for fiscal requirements.
(3) Prepare annual budget submission and mid-year review deficiencies.
(4) Submit annual and review mid-year review budgets to the appropriate fund administrator.
(5) Monitor and review budgeting accounts in accordance with local directives and policies.
(6) Identify and submit budget shortfalls in accordance with local directives and policies.

Performance Standard. Must be in accordance with applicable orders and directives.

ADM-303 24 Z E N/A L

Goal. Develop Standard Operating Procedures/Desktop Procedures.

Requirement. The Standard Operating Procedures (SOP) and/or Desktop Procedures must outline and specifically address local procedures and conform to doctrine and policies that governs Marine Corps practices and requirements:

(1) Review existing or previous SOP's and local directives.
(2) Assess meteorological and oceanographic support requirements.
(3) Assess locally imposed manpower, fiscal, facility constraints.
(4) Document standard operating procedures.
(5) Submit SOP to the Commanding Officer for approval and signature.

Performance Standard. Must be in accordance with applicable orders and directives.

ADM-304 16 Z E N/A L

Goal. Conduct and evaluate pre-deployment screenings and inspections.

Requirement. Utilizing the MWSG MCCRES and upon notification of impending operation, or quarterly to ensure section deployment readiness, conduct, evaluate and determine whether the meteorological and oceanographic (METOC) unit is capable of providing required services per the mission in support of the MAGTF:

(1) Conduct and evaluate by mission performance standards (MPS) capability to perform all mission support functions using the MWSG MCCRES checklist.
(2) Assign grade (mission capable or non-mission capable).
(3) Utilize inspection results and findings to correct deficiencies.

Performance Standard. must be in accordance with applicable orders and directives.

ADM-305 4 Z E N/A L

Goal. Provide information for Base Engineering Site Evaluation Plan (BESEP) equipment studies.

Requirement. Provide specific information for the completion of the equipment installation BESEP:

(1) Identify future equipment installation requirements.
(2) Assist S-4/Facilities Officer/ROICC in identifying location equipment installation.
(3) Review draft BESEP.
(4) Provide additional information as required in the development of the BESEP.
(5) Notify BESEP Engineering Agent when identified plans/facilities change.

Performance Standard. Must be in accordance with applicable orders and directives.

ADM-306	5	Z	E	N/A	L

Goal. Establish and maintain liaison with other service counterparts.

Requirement. Given a requirement to maintain interoperability with other services, liaison with other service counterparts to assist one another in the accomplishment of meteorological and oceanographic (METOC) functions:

(1) Monitor other services' METOC programs and establish liaison with other service counterparts through official correspondence.
(2) Identify relevant METOC programs to include coordination of research and development efforts, to avoid duplication and ensure commonality in the improvement of METOC capabilities.
(3) Implement programs identified for Marine Corps use.

Performance Standard. Must be in accordance with applicable orders and directives.

ADM-307	3	Z	E	N/A	L

Goal. Brief Meteorological and Oceanographic (METOC) capabilities.

Requirement. Brief current METOC mission support capabilities so the commanders may make operational decisions regarding METOC employment:

(1) Assess the METOC requirements of the targeted audience.
(2) Prepare the METOC capabilities brief.
(3) Conduct the METOC capabilities brief.

Performance Standard. Must be in contain all information pertaining to the METOC support missions.

ADM-308	6	Z	E	N/A	L

Goal. Support Staff Planning.

Requirement. Given assignment to a Headquarters Staff, provide the commander and staff with relevant METOC specific operational impacts for planning considerations:

(1) Conduct climatological study.
(2) Assess impacts on friendly and enemy operations.
(3) Integrate the METOC impact assessment with the commander's stated mission, IPB and COA development.
(4) Continue to support the commander's COA.

Performance Standard. Must be in accordance with applicable orders and directives.

2. Operations (OPS)

a. Purpose. To continue the development of advanced METOC knowledge of the principles and concepts relating to METOC operations for a METOC Officer.

b. Academic Training. Academic training will be conducted prior to and concurrently with required events. An academic training event, once completed, can be credited for follow on training events.

c. Events

OPS-309	56	Z	E	N/A	L

Goal. Develop Meteorological and Oceanographic (METOC) Annex H for an Operations Order.

Requirement. After the warning order is received, develop an Operations Order Annex H that supports all METOC requirements:

(1) Identify customer requirements.
(2) Identify METOC assets available.
(3) Coordinate with higher headquarters and other services providing METOC support.
(4) Identify to higher headquarters METOC support deficiencies.
(5) Develop annex to support METOC requirements.
(6) Submit annex to Operations Staff.

Performance Standard. Annex H must be in accordance with applicable orders and directives.

3. Security (SEC)

a. Purpose. To continue the development of security processes and procedures.

b. Academic Training. Academic training will be conducted prior to and concurrently with required events. An academic training event, once completed, can be credited for follow on training events.

c. Events

SEC-310	24	E	N/A	L

Goal. Establish a security program.

Requirement. Establish a security program that safeguards communications security (COMSEC) equipment and classified material:

(1) Ensure Marine has required clearance from Security Manager, commensurate with billet.
(2) Maintain access letters to local secured spaces.
(3) Maintain copy of letter granting access until no longer required per current directives.
(4) Maintain and revise as necessary, local Security Standard Operating Procedure.
(5) Request from an cognizant authority, maintain and update as necessary a physical security evaluation (PSE).
(6) Ensure personnel receive all security-training requirements directed by the references.

Performance Standard. Must be in accordance with applicable orders and directives.

4. Training (TRN)

a. Purpose. To continue the development of advanced METOC knowledge of the principles and concepts relating to METOC operations for a METOC Officer.

b. Academic Training. Academic training will be conducted prior to and concurrently with required events. An academic training event, once completed, can be credited for follow on training events.

c. Events

TRN-311	6	Z	E	N/A	L

Goal. Establish and conduct certification program for METOC personnel.

Requirement. Establish and conduct a certification for METOC personnel:

(1) Select qualified board evaluators.
(2) Task the Marine to prepare a forecast or to take observations (surface, surf, upper air).
(3) Question Marine on reasoning and logic concerning their forecast or observations.
(4) Consider recommendations of all evaluators.
(5) Make certification recommendation to signing authority.
(6) Prepare and forward appropriate certification certificate to the signing authority for successful forecasters/observers.

Performance Standard. Must be in accordance with applicable orders and directives.

TRN-312	1	Z	E	N/A	L

Goal. Establish and conduct Tower Visibility certification procedures for Air Traffic Control (ATC) personnel.

Requirement. Establish a localized training program to certify ATC personnel as Tower Visibility Observers:

(1) Maintain current versions of all training materials.
(2) Obtain results of tower visibility exams.
(3) Prepare certification certificate for the appropriate certifying authority signature.
(4) Return signed certificates to ATC Officer.
(5) Maintain copies of all test results and signed certificates.
(6) Maintain a roster of Tower Visibility certified ATC personnel.

Performance Standard. Must be in accordance with applicable orders and directives.

TRN-313	3	Z	E	N/A	L

Goal. Establish a meteorological and oceanographic (METOC) training program to satisfy MAGTF METOC support requirements.

Requirement. Establish a METOC training program to satisfy MAGTF component METOC support requirements:

(1) Determine MAGTF METOC support requirements.
(2) Develop a comprehensive training plan.
(3) Implement the training plan, to include deployment of personnel and assets.
(4) Evaluate effectiveness of training plan and revise accordingly.

Performance Standard. Must be in accordance with applicable orders and directives.

334. FULL COMBAT QUALIFICATION TRAINING

1. Administration (ADM)

a. Purpose. To continue the development of administrative knowledge pertaining to METOC support.

b. Events

ADM-400	18	Z	E	N/A	L

Goal. Conduct a meteorological and oceanographic (METOC) Staff Study for each new DOD weapon system.

Requirement. Given a staff study objective and availability of required resources, submit a finalized conclusion or recommendation to a staff study:

(1) Evaluate the objectives of an assigned staff study.
(2) Research applicable resources of information.
(3) Compile the data necessary to satisfy the objectives of the assigned study.

Performance Standard. Must be in accordance with applicable orders and directives.

2. Operations (OPS)

a. Purpose. To continue the development of advanced METOC knowledge of the principles and concepts relating to METOC operations for a METOC Officer.

b. Academic Training. Academic training will be conducted prior to and concurrently with required events. An academic training event, once completed, can be credited for follow on training events.

c. Events

OPS-401	24	Z	E	N/A	L

Goal. Perform duties as Joint/Combined METOC Officer.

Requirement. Coordinate METOC effort to support the CJTF’s AO when assigned as Joint METOC Officer (JMO) for an operation or contingency:

(1) Identify theater METOC requirements.
(2) Identify and organize staff.
(3) Develop Annex H to Operational Order (OPORD)/OPLAN/CONPLAN.
(4) Identify JMFU location, staff and operational requirements.
(5) Maintain liaison with CinC SMO and component SMO's.
(6) Supervise and manage theater METOC assets.

Performance Standard. Must be in accordance with applicable orders and directives.

OPS-402 24 Z E N/A L

Goal. Perform duties as MARFOR Staff METOC Officer

Requirement. Coordinate METOC effort to support the MAGTF AO when assigned as MARFOR METOC Officer for an operation or contingency:

(1) Identify MARFOR METOC requirements.
(2) Identify and organize staff.
(3) Develop Annex H and provide input to other annexes of the Operational Order (OPORD)/OPLAN.
(4) Maintain liaison with JMO and component SMO's.
(5) Supervise and manage MARFOR's METOC assets.

Performance Standard. Must be in accordance with applicable orders and directives.

3. Training (TRN)

a. Purpose. To continue the development of training principles and concepts relating to METOC operations.

b. Academic Training. Academic training will be conducted prior to and concurrently with required events. An academic training event, once completed, can be credited for follow on training events.

c. Events

TRN-403 3 Z E N/A L

Goal. Provide Marine Aviation Weapons and Tactics Instruction (WTI)

Requirement. Train METOC personnel on capabilities and environmental impacts on Marine aviation functions, weapons, platforms, radars, and jammers and the capability of each:

(1) Prepare tailored periods of instruction based upon WTI curriculum.
(2) Present period of instruction on WTI curriculum.

Performance Standard. Must be in accordance with applicable orders and directives.

Prerequisite. WTI-500,WTI-600.

External Syllabus Support. MAWTS-1 Academic Support Package.

TRN-404 4 Z E N/A L

Goal. Establish and conduct a Weapons and Tactics Training Program (WTTP).

Requirement. Conduct a professional Aviation Weapons and Tactics Training Program, which include both individual and collective training. This training shall emphasize integration with other aviation units and supporting arms and support a their scheme of maneuver:

(1) Maintain relevant knowledge concerning the threat, threat tactics and counter tactics.
(2) Prepare tailored periods of instruction based upon WTI training curriculum.
(3) Present period of instruction.
(4) Within 30 days of deployments, operations and major exercises, submit appropriate information including post exercise/deployment reports and MCLLS.

Performance Standard. Must be in accordance with applicable orders and directives.

Prerequisite. TNG-403, WTI-500,WTI-600.

External Syllabus Support. MAWTS-1 Academic Support Package.

340. INSTRUCTOR QUALIFICATION TRAINING

1. Weapons Tactics Instructor

a. Purpose. This stage of the training is to prepare personnel to become instructors of MAGTF weapons and tactics.

b. General

(1) Administrative Notes. Training shall be conducted at Yuma, Arizona.

(2) Stage end performance. Upon completion of this stage of the syllabus the METOC officer shall be eligible for the 6877 MOS. Completion of WTI-600 event required for qualification tracking.

d. Academic Training. Academic training events are graded and tracked at the administering unit. Supplemental training events and training packages are highly encouraged.

e. Event Training

WTI-500 480 Z E N/A L

Goal. Weapons and Tactics Instructor training

Requirement. Complete WTI Course.

Performance Standard. Successfully complete the WTI Course and be awarded the 6877 MOS.

Prerequisite. CWO2, 18 months FMF experience, and a corresponding MEF level exercise.

External Syllabus Support. MAWTS –1 syllabus.

350. REQUIREMENTS, QUALIFICATIONS AND DESIGNATIONS

1. Weapons Tactics Instructor Qualification

a. Purpose. This stage of the syllabus is provide tracking codes for events required for the WTI qualification.

b. General. Completion of the events will not result in an increase in Combat Readiness Percentage and are used for tracking of the qualification.

d. Event Training

WTI-600	N/A	Z	E	N/A L

Goal. Tracking code for Weapons and Tactics Instructor

Requirement. To ensure WTI course completion is obtained.

Performance Standard. Successful completion of WTI Course.

Prerequisite. Completion the WTI course and awarded the 6877 course.

380. EVENT CRP/HOURS/REFRESH BREAKDOWN. Tables 3-8 through 3-12 at the end of chapter provide listings of the events, hours and combat readiness percentage for each stage of the syllabus.

Table 3-8.—-METOC Officer Combat Ready Events.

Combat Ready Training Events (Events, Hours, Interval and CRP)					
STAGE	**CODE**	**HRS**	**Interval**	**CRP**	**Notes**
FAM	200	2		4	
OPS	201	3		4	
OPS	202	3		4	
ADM	203	6		4	
ADM	204	6		4	
TOTALS		20		20	

Table 3-9.—-METOC Officer Combat Qualified Events.

Combat Qualified Training Events (Events, Hours, Interval and CRP)					
STAGE	**CODE**	**HRS**	**Interval**	**CRP**	**Notes**
ADM	300	24		1	
ADM	301	24		1	
ADM	302	56		1	
ADM	303	24		1	
ADM	304	16		1	
ADM	305	4		1	
ADM	306	5		1	
ADM	307	3		1	
ADM	308	6		1	
OPS	309	56		1	
SEC	310	24		1	
TRN	311	6		1	
TRN	312	1		1.5	
TRN	313	3		1.5	
TOTALS		252		15	

Table 3-10.—-METOC Officer Full Combat Qualified Events.

Full Combat Qualified Training Events (Events, Hours, Interval and CRP)					
STAGE	**CODE**	**HRS**	**Interval**	**CRP**	**Notes**
ADM	400	18		1	
OPS	401	24		1	
OPS	402	24		1	
TRN	403	3		1	
TRN	404	4		1	
TOTALS		73		5	

Table 3-11.—-Instructor Qualification Events.

Full Combat Qualified Training Events (Events, Hours, Interval and CRP)					
STAGE	**CODE**	**HRS**	**Interval**	**CRP**	**Notes**
WTI	500	480			
TOTALS		480			

Table 3-12.—-Requirements, Qualifications and Designations Events.

Requirements, Qualification, Designations Events (Events, Hours, Interval and CRP)					
STAGE	**CODE**	**HRS**	**Interval**	**CRP**	**Notes**
WTI	600	0			Requires designating authority letter

390. EVENT CHAINING. Currently no chaining exists for the METOC officer syllabus.

APPENDIX A

COURSE TABLES

1. Formal Courses. The following courses are required for completion of the T&R syllabus.

Code	Course Title	Sponsor
F0268B1	Marine Corps Weather Observer Course	NTTU Keesler, AFB
N61RCB1	Aerographers Mate Advanced For USMC METOC Analyst/Forecast Course (MOAF)	NTTU Keesler, AFB
F020321	Tropical Weather Analysis and Forecasting	NTTU Keesler, AFB
F02KBK1	WSR-88D PUP Operator/Manager	NTTU Keesler, AFB
F02L321	GCCS Basic Administrator	Local Command
F02RAA1	GCCS UNIX	Local
N01WBM2	Joint METOC Tactical Applications Course San Diego,CA	PDD San Diego
N02WBM1	Joint METOC Tactical Applications Course Norfolk, VA	PDD Norfolk
	OA divisional trainer	PDDs
	Mobile Tactical Training Course	PDDs
	Reserve Aerographers Mate Course	PDDs
E3AIR3S200	Basic Instructors course.	NTTU Keesler, AFB
	Objectives and Tests	NTTU Keesler, AFB
	Instructional System Development course	NTTU Keesler, AFB
	Navy/Marine Corps security manager’s course	See local S2 for information

2. Computer Based Training.

COURSE	T&R ACADEMIC CODE	PCN/SUPPLY NAVY CODE
A Social Science Perspective on Flood Events	CBT 001	
Buoyancy and CAPE	CBT 002	
Coastally Trapped Wind Reversals	CBT 003	
Cold Air Damming	CBT 004	
Community Hurricane Preparedness	CBT 005	
Definition of the Mesoscale	CBT 006	
Diagnosing and Forecasting Extra-tropical Transition: A Case Exercise on Hurricane Michael	CBT 007	
Dispersion Basics	CBT 008	
Experimental Satellite Derived Tropical Rainfall Potential (TRaP)	CBT 009	
Feature Identification from Environmental Satellites	CBT 010	
Flow Interaction with Topography	CBT 011	
Forecasting Aviation Icing: Icing Type and Severity	CBT 012	
How Mesoscale Models Work	CBT 013	
Hurricane Strike!™	CBT 014	

COURSE	T&R ACADEMIC CODE	PCN/SUPPLY NAVY CODE
Hurricanes Canadian Style: Extra-tropical Transition	CBT 015	
Hydrology for the Meteorologist: The Headwater Forecast Process	CBT 016	
Icing Assessment Using Soundings and Wind Profiles	CBT 017	
Introduction to Fire Behavior: Influences of Topography, Fuels, and Weather on Fire Ignition and Spread	CBT 018	
Mesoscale Convective Systems: Squall Lines and Bow Echoes	CBT 019	
Predicting Supercell Motion Using Hodograph Techniques	CBT 020	
Principles of Convection I: Buoyancy and CAPE	CBT 021	
Quantitative Precipitation Forecasting Overview	CBT 022	
Radiation Fog	CBT 023	
Remote Sensing Using Satellites	CBT 024	
The Balancing Act of Geostrophic Adjustment	CBT 025	
The MJO Life Cycle	CBT 026	
The Role of the MJO on Oceanic and Atmospheric Variability	CBT 027	
The Use and Misuse of Conditional Symmetric Instability	CBT 028	
Thermally-forced Circulation I: Sea Breezes	CBT 029	
Thermally-forced Circulation II: Mountain/Valley Breezes	CBT 030	
Urban Flooding: It Can Happen in a Flash!	CBT 031	
West Coast Fog	CBT 032	

3. Correspondence Course Training. Current correspondence courses required for completion of the syllabus.

COURSE	T&R ACADEMIC CODE	PCN/SUPPLY NAVY CODE
AEROGRAPHER'S MATE 1 AND C		NAVEDTRA 14010
AEROGRAPHER'S MATE MODULE 1 - SURFACE WEATHER OBSERVATIONS	WBA	NAVEDTRA 14269
AEROGRAPHER'S MATE MODULE 2 - MISCELLANEOUS OBSERVATIONS AND CODES	WBB	NAVEDTRA 14270
AEROGRAPHER'S MATE MODULE 3 - ENVIRONMENTAL SATELLITES AND WEATHER RADAR	WBC	NAVEDTRA 14271
AEROGRAPHER'S MATE MODULE 4 - ENVIRONMENTAL COMMUNICATIONS AND ADMINISTRATION	WBD	NAVEDTRA 14272
AEROGRAPHER'S MATE MODULE 5 - BASIC METEOROLOGY	WBE	NAVEDTRA 14312
INTRODUCTION TO METEOROLOGY	WAG	
INTRODUCTION TO FORECASTING	WAH	
PRINCIPLES OF OCEANOGRAPHY	WAJ	

4. Technical training Publications. Current correspondence courses required for completion of the syllabus.

Lecture Title		Sponsor
THE USE OF THE SKEW-T LOG P DIAGRAM IN ANALYSIS AND FORECASTING		AWS/TR-79/006
ATMOSPHERIC REFRACTION		METOC 50-1T-0202
BASIC SURFACE CHART ANALYSIS		METOC 50-1T-0301
ENCODING, DECODING AND PLOTTING THE SYNOPTIC REPORT		METOC 50-1T-0302
INTRODUCTION TO ELECTRO-OPTICS		METOC 50-1T-0303
TROPICAL SYNOPTIC MODELS		METOC 50-1T-0304
TROPICAL STREAMLINE ANALYSIS		METOC 50-1T-9607
A WORKBOOK ON TROPICAL CLOUDS AND CLOUD SYSTEMS OBSERVED IN SATELLITE IMAGERY, VOL 1		METOC 50-1T-9610
A WORKBOOK ON TROPICAL CLOUDS AND CLOUD SYSTEMS OBSERVED IN SATELLITE IMAGERY, VOL 2		METOC 50-1T-9610
EVALUATING AND ENCODING BATHYTHERMOGRAPH (BT) DATA		METOC 60-1T-0203
FLEET OCEANOGRAPHIC AND ACOUSTIC REFERENCE MANUAL		RP33
AEROGRAPHER'S MATE SECOND CLASS - VOL 1		NAVEDTRA 10370
AEROGRAPHER'S MATE SECOND CLASS - VOL 2		NAVEDTRA 10371

5. Squadron Level Training.

Code	Lecture Title	Sponsor
	Cisco Router	Local ISC
	Office 2000 Basics	Local ISC
	Annual Security Refresher training	Security Manager

6. METOC Unit Training.

Code	Lecture Title	Sponsor
	Familiarization with Local Standing Operating Procedures	
	Air Force Qualification Training Package	Air Force

APPENDIX B

REFERENCES

Reference Number	Long Title	Short Title
1	TRAFFIC CONTROLLERS AS TOWER VISIBILITY OBSERVERS	NAVMETOCCOMINST 1500.3_
2	JOINT SURF MANUAL	CNSPINST/CNSLINST 3840.1
3	JOINT METOC OPERATIONS	CJCSI 3810.01_
4	JOINT DOCTRINE FOR METOC OPERATIONS	JP 3-02
5	JOINT DOCTRINE, TACTICS, TECHNIQUES AND PROCEDURES FOR METOC OPERATIONS	JP 3-59
6	JOINT METEOROLOGICAL HANDBOOK	JMH
7	PROCEDURES FOR QUALIFICATION AND CERTIFICATION OF NAVY AND MARINE CORPS AIR UNITED STATES NAVY METEOROLOGICAL AND OCEANOGRAPHIC SUPPORT MANUAL	NAVMETOCCOMINST 3140.1_
8	PROCEDURES GOVERNING FLIGHT WEATHER BRIEFINGS AND PREPARING DD FORM 175-1 AND US NAVY FLIGHT FORECAST FOLDER	NAVMETOCCOMINST 3140.14D
9	POLICIES CONCERNING THE PROVISION OF METEOROLOGICAL AND OCEANOGRAPHY PRODUCTS AND SERVICES	NAVMETOCCOMINST 3140.17_
10	LOCAL AREA AND AREA OF RESPONSIBILITY FORECASTER'S HANDBOOKS	NAVMETOCCOMINST 3140.2_
11	METEOROLOGICAL AND OCEANOGRAPHIC (METOC) POST-DEPLOYMENT REPORTS	NAVMETOCCOMINST 3140.23_
12	ATMOSPHERIC TURBULENCE AND ICING CRITERIA	NAVMETOCCOMINST 4140.4_
13	FLEET LIAISON PROGRAM	NAVMETOCCOMINST 3140.7_
14	EARTHQUAKE OBSERVATION AND REPORTING PROGRAM	NAVMETOCCOMINST 3141.1_
15	SURFACE METAR OBSERVATIONS USER'S MANUAL	NAVMETOCCOMINST 3141.2
16	PROCEDURES GOVERNING PILOT WEATHER REPORTS	NAVMETOCCOMINST 3142.1_
17	AERODROME FORECAST (TAF) CODE	NAVMETOCCOMINST 3143.1_
18	UNITED STATES NAVY MANUAL FOR SHIP'S SURFACE WEATHER OBSERVATIONS	NAVMETOCCOMINST 3144.1_
19	MAINTENANCE AND MATERIAL MANAGEMENT (3M) SYSTEMS POLICIES AND PROCEDURES FOR NAVMETOCCOM SPONSORED EQUIPMENT	NAVMETOCCOMINST 4790.2_
20	GEOPHYSICS FLEET MISSION PROGRAM LIBRARY	NAVMETOCCOMINST 5232.1_
21	MISSION, ORGANIZATION, AND FUNCTIONS OF THE NAVAL METOC COMMUNITY	NAVMETOCCOMINST 5450.9_
22	METEOROLOGICAL EQUIPMENT MANAGEMENT AND PLANNING POLICY	NAVMETOCCOMINST 13950.1_
23	WARNINGS AND CONDITIONS OF READINESS CONCERNING HAZARDOUS OR DESTRUCTIVE WEATHER PHENOMENON	OPNAVINST 3140.24_
24	NATOPS GENERAL FLIGHT AND OPERATING INSTRUCTIONS	OPNAVINST 3710.7_
25	FLEET NUMERICAL METOC OPARS MANUAL	P-3710

Reference Number	Long Title	Short Title
26	RAWINSONDE AND PIBAL OBSERVATIONS	FMH 3
27	MARINE CORPS HEAT INJURY PREVENTION PROGRAM	6200.1_
28	DEPARTMENT OF NAVY PERSONNEL SECURITY PROGRAM (PSP) REGULATION	SACNAVINST 5510.30_
29	DEPARTMENT OF THE NAVY INFORMATION SECURITY PROGRAM (ISP) REGULATION	SACNAVINST 5510.36
30	USMC INFORMATION ASSURANCE PROGRAM (MCIAP)	MCO 5239.2
31	USMC INFORMATION AND PERSONNEL SECURITY PROGRAM MANUAL	MCO P5510.18_
32	MARINE CORP PHYSICAL SECURITY PROGRAM MANUAL	MCO 5530.14
33	NAVY AND MARINE CORPS AWARDS MANUAL	SECNAVINST 1650.1_
34	DON FILE MAINTENANCE PROCEDURES AND STANDARD SUBJECT IDENTIFICATION CODES (SSIC)	SECNAVINST 5210.11_
35	NAVY AND MARINE CORPS RECORDS DISPOSITION MANUAL	SECNAVINST 5212.5_
36	DON CORRESPONDENCE MANUAL	SECNAVINST 5216.5_
37	DON POLICY FOR CONTENT OF PUBLICLY ACCESSIBLE WORLD WIDE WEB SITES	SECNAVINST 5720.47
38	MARINE CORPS PUBLICATIONS LIBRARY MANAGEMENT SYSTEM FIELD USER'S GUIDE	UM-PLMS
39	MARINE CORPS UNIFORM REGULATIONS	MCO P1020.34_
40	MARINE CORPS INDIVIDUAL RECORDS ADMINISTRATION MANUAL (IRAM)	MCO P1070.12_
41	MILITARY OCCUPATIONAL SPECIALTIES (MOS) MANUAL	MCO P1200.7_
42	MARINE CORPS PROMOTION MANUAL, VOLUME 2 ENLISTED PROMOTIONS	MCO P1400.32C
43	PERFORMANCE EVALUATION SYSTEM (PES)	MCO P1610.7_
44	ADMINISTRATIVE AND ISSUE PROCEDURES FOR DECORATIONS, MEDALS, AND AWARDS	MCO 1650.19_
45	FAMILY CARE PLANS	MCO 1740.13_
46	OPERATIONAL RISK MANAGEMENT (ORM)	MCO 3500.27_
47	MARINE CORPS COMBAT READINESS AND EVALUATION SYSTEM (MCCRES)	MCO 3501.1_
48	MCCRES VOL XII, MWSG UNITS	MCO 3501.17
49	CONSUMER LEVEL SUPPLY POLICY MANUAL	MCO P4400.150_
50	DOD SUPPLY MANAGEMENT REFERENCE BOOK	MCO 4400.163
51	STORAGE AND HANDLING OF HAZARDOUS MATERIALS	MCO 4450.12
52	MARINE CORPS INSPECTIONS	MCO 5040.6_
53	MARINE CORPS SAFETY PROGRAM	MCO 5100.29
54	MARINE CORPS OCCUPATIONAL SAFETY AND HEALTH PROGRAM MANUAL	MCO P1500.8_
55	USMC INTERNAL MANAGEMENT CONTROL PROGRAM	MCO 5200.24_
56	RECORDS MANAGEMENT PROGRAM FOR THE USMC	MCO 5210.11_
57	MARINE AIRCRAFT GROUP (MAG) FISCAL HANDBOOK	MCO P7300.19_
58	STORAGE AND HANDLING OF COMPRESSED GASES AND LIQUIDS IN CYLINDERS, AND OF CYLINDERS	MCO 10330.2_
59	USER'S GUIDE TO COUNSELING	NAVMC 2795
60	ENLISTED CAREER COUNSELOR’S HANDOUT	MME HANDOUT

Reference Number	Long Title	Short Title
61	AUTOMATED SURFACE OBSERVING SYSTEM (ASOS) USER'S GUIDE	ASOS
62	MIDDS USER'S GUIDE	MIDDS
63	METMF(R USER'S LOGISTICS SUPPORT SUMMARY (ULSS) SEP2001	EM-400-AL-LSS-A10/AN/TMQ44A(V)1
64	METMF(R) SYSTEM'S MANUAL SECTION	EM000-AX-OMI-A10
65	SHIP'S MAINTENANCE AND MATERIAL MANAGEMENT (3M) MANUAL	OPNAVINST 4790.4_
66	TECHNICAL MANUAL - WSR88D	NAV EM400-AA-MMM-010/WSR88D
67	OPERATOR HANDBOOK, GRAPHIC TABLET	WSR88D PUP VOL 1
68	OPERATOR HANDBOOK, APPLICATIONS TABLET	WSR88D PUP VOL 2
69	OPERATOR HANDBOOK, SYSTEM CONSOLE	WSR88D PUP VOL 3
70	AEROGRAPHER'S MATE SECOND CLASS - VOL 1	NAVEDTRA 10370
71	AEROGRAPHER'S MATE SECOND CLASS - VOL 2	NAVEDTRA 10371
72	AEROGRAPHER'S MATE 1 AND C	NAVEDTRA 14010
73	AEROGRAPHER'S MATE MODULE 1 - SURFACE WEATHER OBSERVATIONS	NAVEDTRA 14269
74	AEROGRAPHER'S MATE MODULE 2 - MISCELLANEOUS OBSERVATIONS AND CODES	NAVEDTRA 14270
75	AEROGRAPHER'S MATE MODULE 3 - ENVIRONMENTAL SATELLITES AND WEATHER RADAR	NAVEDTRA 14271
76	AEROGRAPHER'S MATE MODULE 4 - ENVIRONMENTAL COMMUNICATIONS AND ADMINISTRATION	NAVEDTRA 14272
77	AEROGRAPHER'S MATE MODULE 5 - BASIC METEOROLOGY	NAVEDTRA 14312
78	THE USE OF THE SKEW-T LOG P DIAGRAM IN ANALYSIS AND FORECASTING	AWS/TR-79/006
79	ATMOSPHERIC REFRACTION	METOC 50-1T-0202
80	BASIC SURFACE CHART ANALYSIS	METOC 50-1T-0301
81	ENCODING, DECODING AND PLOTTING THE SYNOPTIC REPORT	METOC 50-1T-0302
82	INTRODUCTION TO ELECTRO-OPTICS	METOC 50-1T-0303
83	TROPICAL SYNOPTIC MODELS	METOC 50-1T-0304
84	TROPICAL STREAMLINE ANALYSIS	METOC 50-1T-9607
85	A WORKBOOK ON TROPICAL CLOUDS AND CLOUD SYSTEMS OBSERVED IN SATELLITE IMAGERY, VOL 1	METOC 50-1T-9610
86	A WORKBOOK ON TROPICAL CLOUDS AND CLOUD SYSTEMS OBSERVED IN SATELLITE IMAGERY, VOL 2	METOC 50-1T-9610
87	EVALUATING AND ENCODING BATHYTHERMOGRAPH (BT) DATA	METOC 60-1T-0203
88	FLEET OCEANOGRAPHIC AND ACOUSTIC REFERENCE MANUAL	RP33
89	CATALOG OF NAVAL OCEANOGRAPHIC OFFICE UNCLASSIFIED PUBLICATIONS	RP51
90	MARINE BATTLE SKILLS TRAINING (MBST)	MCO 1500.51_
91	COMPETENCIES FOR THE MARINE CORPS OFFICE, VOL 2, CAPTAIN	MCO 1510.99
92	MARINE CORPS COMMON SKILLS (MCCS) PROGRAM	MCO 1553.3

Reference Number	Long Title	Short Title
93	MARINE CORPS TRAINING, EXERCISE, AND EMPLOYMENT PLAN (MCTEEP)	MCO 3500.25
94	NBC FIELD HANDBOOK	FM 3-7
95	INTELLIGENCE PREPARATION OF THE BATTLEFIELD	FM 34-130
96	GROUND COMBAT OPERATIONS	FMFM 6
97	INTELLIGENCE OPERATIONS	MCWP 2-1
98	AVIATION OPERATIONS	MCWP 3-2
99	AVIATION GROUND SUPPORT	MCWP 3-21.1
100	DOCTRINE FOR NAVY AND MARINE CORPS JOINT RIVERINE OPERATIONS	MCWP 3-35.4
101	MAGTF METOC SUPPORT	MCWP 3-35.7
102	MARINE CORPS PLANNING PROCESS	MCWP 5-1
103	MARINE CORPS SUPPLEMENT TO THE DOD DICTIONARY AND ASSOCIATED TERMS	MCRP 5-12_

APPENDIX C

APPRENTICE METOC ANALYST QUALIFICATION CHECKLIST

RANK: _____ NAME: _____ SSN: _____

METOC INSTRUCTOR: _____ LOCATION: _____

DATE CERTIFICATION BEGAN: _____ METOC CHIEF: _____

DATE QUALIFICATION AWARDED: _____ METOC OFFICER: _____

Tie-in	**Description**	**REQUIREMENT**			
ACP-116	Introduce and demonstrate retention of METOC Standard Operating Procedures (SOP).	MAI Init	Date	Qual Board	Date
ACP-116a	Local security procedures.				
ACP-116b	Airfield description				
ACP-116c	Watch Routine.				
ACP-116d	METOC equipment				
ACP-116e	Command structure				
ACP-116f	Warning criteria/procedures				

Tie-in	**Description**	**REQUIREMENT**			
ACP-117	Introduce and exhibit retention of METOC missions knowledge.	MAI Init	Date	Qual Board	Date
ACP-117a	Marine Corps METOC community.				
ACP-117b	Local METOC mission.				
ACP-117c	METOC Analyst Apprentice mission.				
ACP-117d	Airfield Operations.				
ACP-117e	Marine Corps Aviation.				
ACP-117f	Deployable METOC units.				

Tie-in	**Description**	**REQUIREMENT**			
ACP-118	Introduce and exhibit retention of orders and directives governing METOC support.	MAI Init	Date	Qual Board	Date
ACP-118a	Desktop procedures.				
ACP-118b	NAVMETOCCOMINST 3141.2 Surface METAR Observation User’s manual.				
ACP-118c	OPNAVINST 3140.24(_) Warning and Conditions of Readiness.				
ACP-118d	NAVMETOCCOMINST 3142.1(_) Pilot Reports.				
ACP-118e	OPNAVINST 3710.7(_) NATOPS Manual.				
ACP-118f	Local Destructive Weather Order.				
ACP-118g	MCWP 3-35.7 MAGTF METOC Support.				

Tie-in	Description	REQUIREMENT			
ACP-119	Introduce and exhibit retention of the Quality Assurance (QA) Program.	MAI Init	Date	Qual Board	Date
ACP-119	Introduce and exhibit retention of the Quality Assurance (QA) Program.				

Tie-in	Description	REQUIREMENT			
ACP-120	Complete security clearance-access request procedures.	MAI Init	Date	Qual Board	Date
ACP-120a	Attend command security in-doctrination briefing.				
ACP-120b	Attend required security training as denoted in the references.				
ACP-120c	Complete required paperwork (electronic/manual) required for submission of security clearance request.				
ACP-120d	Define and state the responsibilities pertaining to the Emergency action Plan.				

Tie-in	Description	REQUIREMENT			
ACP-121	Develop and certify knowledge of security requirements.	MAI Init	Date	Qual Board	MAI Init
ACP-121a	Read and comprehend local security standing operating procedures.				
ACP-121b	Define and state responsibilities pertaining to … 1. Physical security program. 2. Information security program. 3. Personal security program. 4. Communications security program				

Tie-in	Description	REQUIREMENT			
ACP-122	Develop and certify knowledge of communication configurations and procedures.	MAI Init	Date	Qual Board	MAI Init
ACP-122a	Telephone procedures.				
ACP-122b	Telephone access numbers.				
ACP-122c	Command and facsimile numbers.				
ACP-122d	Pilot to METRO frequencies and procedures.				
ACP-122e	Email address and responsibilities.				
ACP-122f	Tower radio/phone procedures.				

Tie-in	Description	REQUIREMENT			
ACP-123	Develop and certify knowledge of Garrison METOC Equipment.	MAI Init	Date	Qual Board	MAI Init
ACP-123a	Certified knowledge of Garrison METOC Equipment.				

Tie-in	Description	REQUIREMENT			
ACP-124	Develop and certify knowledge of Tactical METOC Equipment.	MAI Init	Date	Qual Board	MAI Init
ACP-124a	Certified knowledge of Tactical METOC Equipment.				

Tie-in	Description	REQUIREMENT			
ACP-125	Develop and certify proficiency at operating knowledge of hand-Held meteorological devices.	MAI Init	Date	Qual Board	MAI Init
ACP-125a	Wind sensing devices.				
ACP-125b	Pressure sensing devices.				
ACP-125c	Temperature sensing devices.				
ACP-125d	Ceiling sensing devices.				
ACP-125e	Lightning detection devices				

Tie-in	Description	REQUIREMENT			
ACP-126	Develop and certify basic knowledge of software applications.	MAI Init	Date	Qual Board	MAI Init
ACP-126a	Tactical decision aids.				
ACP-126b	METOC applications.				
ACP-126c	Command and Control (C2) applications.				
ACP-126d	Geospatial applications.				

Tie-in	Description	REQUIREMENT			
ACP-127	Develop and certify knowledge of locally generated METOC support products.	MAI Init	Date	Qual Board	MAI Init
ACP-127a	Terminal aerodrome forecast.				
ACP-127b	Horizontal weather depiction.				
ACP-127c	Flight Weather Briefing package.				
ACP-127d	DD 175-1 Flight Weather Briefing.				
ACP-127e	Daily Weather Forecast.				
ACP-127f	Chemical Downwind Message.				
ACP-127g	Astronomical Data.				
ACP-127h	Tidal Data.				
ACP-127i	Climatological Data.				
ACP-127j	Surf Forecasts.				
ACP-127k	Surface Observations.				
ACP-127l	Upper Air Observations.				
ACP-127m	Blast forecast.				
ACP-127n	Drop Zone Forecast.				

Tie-in	Description	REQUIREMENT			
ACP-128	Develop and certify proficiency at disseminating procedures for Weather Warnings and Advisories.	MAI Init	Date	Qual Board	MAI Init
ACP-128A	Certified proficiency at disseminating procedures for Weather Warnings and Advisories				

Tie-in	Description	REQUIREMENT			
ACP-129	Develop and certify knowledge of dynamic meteorological fundamentals.	MAI Init	Date	Qual Board	MAI Init
ACP-129a	Earth-sun relationship.				
ACP-129b	Greenhouse effect.				
ACP-129c	Insulation.				
ACP-129d	Inversion.				
ACP-129e	Temperature scales.				
ACP-129f	Climate controls.				
ACP-129g	Air masses.				
ACP-129h	Pressure/density altitude.				
ACP-129i	Synoptic scales features.				
ACP-129j	Stages of tropical systems.				
ACP-129k	Cloud formation.				
ACP-129l	Precipitation.				
ACP-129m	Hydrometers.				
ACP-129n	Litho meters.				
ACP-129o	Electrometers.				
ACP-129p	Photometers.				
ACP-129q	Wind.				
ACP-129r	Tornadoes.				
ACP-129s	Thunderstorm.				
ACP-129t	Synoptic Scale Circulation Patterns				
ACP-129u	Mesoscale and Microscale Circulation				
ACP-129v	Mesoscale and Microscale Features				

Tie-in	Description	REQUIREMENT			
ACP-130	Develop and certify knowledge of the fundamentals of a surface observation.	MAI Init	Date	Qual Board	MAI Init
ACP-130a	Sky condition.				
ACP-130b	Visibility.				
ACP-130c	Weather and obstructions to vision.				
ACP-130d	Pressure.				
ACP-130e	Temperature.				
ACP-130f	Wind.				
ACP-130g	Remarks/additive data.				
ACP-130h	Special Criteria.				
ACP-130i	Local Criteria				

Tie-in	Description	REQUIREMENT			
ACP-131	Develop and certify proficiency at operating the Automated Surface Observing System (ASOS).	MAI Init	Date	Qual Board	MAI Init
ACP-131a	Power on system.				
ACP-131b	Log on as user				
ACP-131c	Manipulate software to display desired product.				
ACP-131d	Manipulate software to alter automated products when required.				
ACP-131e	Ensure archiving of data is achieved.				

Tie-in	Description	REQUIREMENT			
ACP-132	Develop and certify proficiency at operating garrison automated sensing equipment.	MAI Init	Date	Qual Board	MAI Init
ACP-132a	Determine and record type of observation.				
ACP-132b	Record time of observation.				
ACP-132c	Verify and record wind direction, speed, character, and significant wind events.				
ACP-132d	Evaluate, verify and record visibility.				
ACP-132e	Determine and record sky condition.				
ACP-132f	Read and record dry bulb and dew point temperatures.				
ACP-132g	Read and record current altimeter setting.				
ACP-132h	Encode and record applicable remarks.				
ACP-132i	Read and record station pressure.				
ACP-132j	Read and record sea level pressure.				
ACP-132k	Proof read recorded elements.				
ACP-132l	Initial observation, confirming accuracy of report.				
ACP-132m	Record summary of the day.				

Tie-in	Description	REQUIREMENT			
ACP-133	Develop and certify proficiency at utilizing manual sensing equipment.	MAI Init	Date	Qual Board	MAI Init
ACP-133a	Determine and record type of observation.				
ACP-133b	Record time of observation.				
ACP-133c	Determine and record wind direction, speed, character, and significant wind events.				
ACP-133d	Evaluate, verify and record visibility.				
ACP-133e	Determine and record sky condition.				
ACP-133f	Determine and record, dry bulb and wet bulb temperatures.				

ACP-133g	Calculate dew point temperature.				
ACP-133h	Determine and record current altimeter setting.				
ACP-133i	Encode and record applicable remarks.				
ACP-133j	Determine and record station pressure.				
ACP-133k	Determine and record sea level pressure.				
ACP-133l	Proof read recorded elements.				
ACP-133m	Initial observation, confirming accuracy of report.				
ACP-133n	Determine and record summary of the day.				

Tie-in	**Description**	**REQUIREMENT**			
ACP-134	Introduce and demonstrate retention of computed values procedures.	MAI Init	Date	Qual Board	MAI Init
ACP-134a	Pressure altitude.				
ACP-134b	Density altitude.				
ACP-134c	Altimeter.				
ACP-134d	Wet Bulb Globe Temperature Index.				
ACP-134e	Wind Chill Temperature.				
ACP-134f	Fahrenheit to Celsius.				
ACP-134g	Relative Humidity.				
ACP-134h	Knots to Miles per hour.				
ACP-134i	Dew point.				

Tie-in	**Description**	**REQUIREMENT**			
ACP-135	Develop and certify proficiency at calculating Pressure Altitude	MAI Init	Date	Qual Board	MAI Init
ACP-135a	Certify proficiency at calculating Pressure Altitude				

Tie-in	**Description**	**REQUIREMENT**			
ACP-136	Develop and certify proficiency at calculating Density Altitude.	MAI Init	Date	Qual Board	MAI Init
ACP-136a	Certify proficiency at calculating Density Altitude.				

Tie-in	**Description**	**REQUIREMENT**			
ACP-137	Develop and certify proficiency at calculating Wet Bulb Globe Temperature Index (WBGTI).	MAI Init	Date	Qual Board	MAI Init
ACP-137a	Take Readings				
ACP-137b	Enter readings on locally prepared forms.				
ACP-137c	Apply standard calculations to readings.				
ACP-137d	Compare sum of corrected readings to index table.				

Tie-in	Description	REQUIREMENT			
ACP-138	Develop and certify proficiency at utilizing Electronic Wet Bulb Globe Temperature Index sensing equipment	MAI Init	Date	Qual Board	MAI Init
ACP-138a	Power on system.				
ACP-138b	Select appropriate scales.				
ACP-138c	Ensure system is configured as per references.				
ACP-138d	Ensure sensing device is maintained per the references.				
ACP-138e	Conduct operator preventative maintenance.				

Tie-in	Description	REQUIREMENT			
ACP-139	Develop and certify proficiency at calculating Wind Chill Temperature.	MAI Init	Date	Qual Board	MAI Init
ACP-139a	Take Readings				
ACP-139b	Obtain wind speed.				
ACP-139c	Calculate wind chill temperatures.				

Tie-in	Description	REQUIREMENT			
ACP-140	Develop and certify proficiency at operating lightning detection equipment.	MAI Init	Date	Qual Board	MAI Init
ACP-140a	Power on system.				
ACP-140b	Log on to the system.				
ACP-140c	Establish communications.				
ACP-140d	Turn on/off directed alarm ranges.				
ACP-140e	Manipulate display support mission.				
ACP-140f	Configure and archive data.				

Tie-in	Description	REQUIREMENT			
ACP-141	Develop and certify knowledge of basic meteorological radar operations.	MAI Init	Date	Qual Board	MAI Init
ACP-141a	Perform power up/power down procedures.				
ACP-141b	Perform log on/log off functions.				
ACP-141c	Identify proper connectivity.				
ACP-141d	Disable alarms and identify threshold exceeded.				
ACP-141e	Retrieve and display radar products.				

Tie-in	Description	REQUIREMENT			
ACP-142	Develop and certify proficiency knowledge of Doppler radar products.	MAI Init	Date	Qual Board	MAI Init
ACP-142	Base Reflectivity.				
ACP-142	Base Velocity.				
ACP-142	Storm relative products.				
ACP-142	Echo tops				
ACP-142	Max tops				

ACP-142	VAD				
ACP-142	VIL				
ACP-142	TVS				

Tie-in	**Description**	**REQUIREMENT**			
ACP-143	Develop and certify knowledge of the Upper Air Messages and the Skew T Log P.	MAI Init	Date	Qual Board	MAI Init
ACP-143a	Decode the upper atmospheric sounding in accordance with the references.				
ACP-143b	Identify the scales and use of scales located on the Skew T Log P diagram.				

Tie-in	**Description**	**REQUIREMENT**			
ACP-144	Develop and certify proficiency at plotting and analyzing a Skew-T Log-P diagram	MAI Init	Date	Qual Board	MAI Init
ACP-144a	Obtain Upper Air Observation Data.				
ACP-144b	Plot mandatory levels, significant levels, and significant wind data.				
ACP-144c	Analyze for CCL.				
ACP-144d	Analyze for LCL.				
ACP-144e	Analyze for LFC.				
ACP-144f	Analyze for PEA.				
ACP-144g	Analyze for NEA.				
ACP-144h	Analyze for SSI.				
ACP-144i	Analyze for T1.				
ACP-144j	Analyze for T2.				
ACP-144k	Analyze for Forecasted maximum temperature.				
ACP-144l	Analyze for Forecasted minimum temperature.				
ACP-144m	Analyze for Freezing level.				
ACP-144n	Analyze for Contrails.				
ACP-144o	Analyze for Tropopause.				

Tie-in	**Description**	**REQUIREMENT**			
ACP-145	Develop and certify proficiency at plotting warnings/advisories	MAI Init	Date	Qual Board	MAI Init
ACP-145a	Select the scale.				
ACP-145b	Plot the warning.				
ACP-145c	Check plots for accuracy				

Tie-in	**Description**	**REQUIREMENT**			
ACP-146	Develop and certify proficiency at plotting local area work charts (LAWC).	MAI Init	Date	Qual Board	MAI Init
ACP-146a	Certify proficiency at plotting local area work charts (LAWC).				

Tie-in	Description	REQUIREMENT			
ACP-147	Develop and certify knowledge of knowledge of ceiling balloon operations.	MAI Init	Date	Qual Board	MAI Init
ACP-147a	Read and comprehends the procedures for determining ceiling heights utilizing ceiling balloons.				
ACP-147b	State the procedures for determining ceiling height utilizing ceiling balloons.				

Tie-in	Description	REQUIREMENT			
ACP-148	Develop and certify knowledge of Pilot Balloon (PIBAL) procedures and equipment	MAI Init	Date	Qual Board	MAI Init
ACP-148a	Theodolite.				
ACP-148b	Plotting board or appropriate software				
ACP-148c	Appropriate balloon based on sky condition.				
ACP-148d	Required weight sets				
ACP-148e	Appropriate conversion tables				

Tie-in	Description	REQUIREMENT			
ACP-149	Develop and certify proficiency at PIBAL observations	MAI Init	Date	Qual Board	MAI Init
ACP-149a	Determine size and color of balloon.				
ACP-149b	Assemble, level and orient the theodolite.				
ACP-149c	Launch balloon.				
ACP-149d	Annotate entries every 60 seconds on form.				
ACP-149e	Using current software enter elevation and azimuth entries. (Manual devices may be substituted if available).				
ACP-149f	Retrieve, encode and disseminate.				

Tie-in	Description	REQUIREMENT			
ACP-150	Develop and certify proficiency Pilot Reports (PIREPs) procedures.	MAI Init	Date	Qual Board	MAI Init
ACP-150a	Receive PIREP via available comm.				
ACP-150b	Annotate the TEI's on the correct form				
ACP-150c	Disseminate the PIREP				

Tie-in	Description	REQUIREMENT			
ACP-151	Develop and certify knowledge of routine METOC reports.	MAI Init	Date	Qual Board	MAI Init
ACP-151a	Earthquake Report.				
ACP-151b	Tsunami Report.				
ACP-151c	Station Information Report				
ACP-151d	Pilot Report.				
ACP-151e	Volcano Report.				

Tie-in	Description	REQUIREMENT			
ACP-152	Develop and certify proficiency at calculating astronomical data.	MAI Init	Date	Qual Board	MAI Init
ACP-152a	Calculate solar and lunar data for 5 specified locations.				

Tie-in	Description	REQUIREMENT			
ACP-153	Develop and certify proficiency at calculating tidal data.	MAI Init	Date	Qual Board	MAI Init
ACP-153a	Calculate tidal data for 5 specified locations.				

Tie-in	Description	REQUIREMENT			
AMO-155	Conduct weather watches	MAI Init	Date	Qual Board	MAI Init
AMO-155a	Ensure all duties are fully completed.				
AMO-155b	Conduct security procedures.				
AMO-155c	Mentor subordinates on watch functions.				
AMO-155d	Identify logistic requirements.				
AMO-155e	Conduct quality assurance procedures.				
AMO-155f	Monitor data ingest of METOC information.				
AMO-155g	Identify observational special criteria relevant to locally produced forecast products and locally produced warnings.				
AMO-155h	Identify and correct METOC analyst apprentice training deficiencies.				
AMO-155i	Ensure the timely and accurate dissemination of locally produced METOC data and products.				
AMO-155j	Ensure the timely and accurate dissemination of locally produced warnings/advisories.				

APPENDIX D

APPRENTICE METOC ANALYST FORECAST SUPPORT CHECKLIST

RANK: _____ NAME: _____ SSN: _____

METOC INSTRUCTOR: _____ LOCATION: _____

DATE CERTIFICATION BEGAN: _____ METOC CHIEF: _____

DATE QUALIFICATION AWARDED: _____ METOC OFFICER: _____

Tie-in	**Description**	**REQUIREMENT**			
FSC-406	Verbally define and discuss the atmospheric fundamentals.	MAI Init	Date	Qual Board	Date
FSC-406a	Long/short wave trough/ridges.				
FSC-406b	Pressure systems.				
FSC-406c	Frontal systems.				
FSC-406d	Jet features.				
FSC-406e	Vorticity.				
FSC-406f	Thickness				
FSC-406g	Condensation/evaporation/sublimation.				
FSC-406h	Convergence/confluence.				
FSC-406i	Divergence/diffluence.				
FSC-406j	Types of baroclinic/barotropic low-pressure systems.				
FSC-406k	Types of baroclinic/barotropic high-pressure systems.				
FSC-406l	Gradient wind.				
FSC-406m	Geostrophic wind.				
FSC-406n	Relative/absolute/specific humidity				
FSC-406o	Pressure gradient.				
FSC-406p	Cloud identification/formation.				

Tie-in	**Description**	**REQUIREMENT**			
FSC-407	To certify knowledge of analyzing and interpreting upper atmospheric weather charts.	MAI Init	Date	Qual Board	Date
	Given reference materials, analyze and interpret the 925/850/700/500/300/250/200 mb constant pressure charts for features, without violating data and analyzation rules, within 6 hours, to exhibit application of upper atmospheric dynamics and physics.				

Tie-in	Description	REQUIREMENT			
FSC-408	To certify knowledge of analyzing and interpreting a surface pressure chart.	MAI Init	Date	Qual Board	Date
FSC-408a	When given a surface chart, apply analytical techniques and depict the meteorological features listed.				
FSC-408b	Discuss meteorological reasoning for placement of features.				

Tie-in	Description	REQUIREMENT			
FSC-409	To certify knowledge of analyzing and interpreting a thickness chart.	MAI Init	Date	Qual Board	Date
FSC-409a	When given a thickness chart, apply analytical techniques and depict the meteorological features listed.				
FSC-409b	Discuss meteorological reasoning for placement of features.				

Tie-in	Description	REQUIREMENT			
FSC-410	To certify knowledge of analyzing and interpreting a vorticity chart.	MAI Init	Date	Qual Board	Date
FSC-410a	When given a vorticity chart, apply analytical techniques and depict the meteorological features listed.				
FSC-410b	Discuss meteorological reasoning for placement of features.				

Tie-in	Description	REQUIREMENT			
FSC-411	To certify knowledge of conducting streamline analysis.	MAI Init	Date	Qual Board	Date
FSC-411a	When given a wind chart, conduct a streamline analysis.				
FSC-411b	Discuss meteorological reasoning for placement of features.				

Tie-in	Description	REQUIREMENT			
FSC-412	To certify knowledge of analyzing and forecasting atmospheric conditions from the Skew-T, Log P Diagram.	MAI Init	Date	Qual Board	Date
FSC-412a	Analyze a SKEW-T LOG P diagram for forecasted elements.				
FSC-412b	(1) Compute indices. (a) Lifted index (b) KI index (c) Sweat index (d) Showalter’s index (e) Total Totals (2) Analyze negative/positive energy areas. (3) Analyze for equilibrium levels.				

	(4) Compute turbulent areas. (5) Compute tops of convective activity. (6) Compute contrails. (7) Compute icing types and levels. (8) Compute maximum and minimum temperatures. (9) Compute hail. (10) Compute thunderstorm gusts. (11) Analyze freezing level. (12) Analyze for areas of moisture. (13) Compute D-Values. (14) Compute Relative humidity.				
FSC-412c	Discuss how the analyzed elements are applicable to current and forecasted weather phenomenon.				

Tie-in	**Description**	**REQUIREMENT**			
FSC-413	To certify knowledge of applied meteorological reasoning in the forecasting of movement and intensity of synoptic scale features. When given required charts, forecast intensity and movement of features listed in the performance steps and provide meteorological justification for forecast.	MAI Init	Date	Qual Board	Date
FSC-413a	Forecast movement and intensity changes in major short wave troughs/ridges.				
FSC-413b	Forecast movement and intensity in upper level high and low pressure system.				
FSC-413c	Forecast isotherms in major short wave features.				
FSC-413d	Forecast moisture in major short wave features.				
FSC-413e	Forecast movement and intensity in minor short waves.				
FSC-413f	Forecast cyclogenesis of baroclinic low-pressure systems.				
FSC-413g	Forecast cycloysis of baroclinic low-pressure systems.				
FSC-413h	Forecast anticyclogenesis of baroclinic high-pressure systems.				
FSC-413i	Forecast anticyclolysis of baroclinic high-pressure systems.				
FSC-413j	Forecast movement and intensity changes in surface pressure systems.				
FSC-413k	Forecast movement and intensity changes in surface frontal systems.				
FSC-413l	Forecast synoptic scale precipitation.				
FSC-413m	Forecast long wave patterns.				
FSC-413n	Forecast movement of jet maxes.				

Tie-in	Description	REQUIREMENT			
FSC-414	To certify knowledge of forecasting severe weather. When given required charts, analyze and forecast for severe weather elements listed and provide meteorological reasoning for each.	MAI Init	Date	Qual Board	Date
FSC-414a	Vertical and horizontal wind shear gradients.				
FSC-414b	Severe Icing				
FSC-414c	Severe/Extreme Turbulence				
FSC-414d	Tornadic activity.				
FSC-414e	Thunderstorm activity.				
FSC-414f	Winter Storms.				

Tie-in	Description	REQUIREMENT			
FSC-415	To certify briefing of METOC features from (re)analyzed products. Analyze and brief (formally or informally) atmospheric dynamic fundamentals depicted on the following products.	MAI Init	Date	Qual Board	MAI Init
FSC-415a	Synoptic weather charts.				
FSC-415b	Thickness charts.				
FSC-415c	Vorticity charts.				
FSC-415d	Constant pressure charts.				
FSC-415e	Tropical cyclone warning displays.				
FSC-415f	Skew-T, Log P diagrams.				
FSC-415g	Streamline charts.				
FSC-415h	Satellite imagery:				
FSC-415i	Radar imagery:				

Tie-in	Description	REQUIREMENT			
FSC-416	To certify knowledge of Terminal Aerodrome Forecast (TAF) content and format. In accordance with the references and utilizing local, regional, and global meteorological models, assess the determine current and forecast meteorological elements and prepare a Terminal Aerodrome Forecast. Complete the following tasks.	MAI Init	Date	Qual Board	MAI Init
FSC-416a	Minimum altimeter setting.				
FSC-416b	Cloud types, amounts and layer heights				
FSC-416c	Precipitation types.				
FSC-416d	Surface visibility.				
FSC-416e	Weather and obstruction to visibility.				
FSC-416f	Maximum/Minimum temperatures.				
FSC-416g	Wind Speed, Direction, and character.				
FSC-416h	Icing type, height, and intensity.				
FSC-416i	Turbulence type, height and intensity.				
FSC-416j	Encode forecast meteorological elements in accordance with reference.				

Tie-in	Description	REQUIREMENT			
FSC-417	To certify knowledge of Weather warnings. assess and forecast conditions phenomenon requiring generation of the listed weather warnings. Generate (live or simulated) each warning 5 times.	MAI Init	Date	Qual Board	MAI Init
FSC-417a	Thunderstorm warnings.				
FSC-417b	Severe Thunderstorm warnings/watches.				
FSC-417c	Tornado warnings/watches.				
FSC-417d	Wind warnings.				
FSC-417e	Storm warning.				
FSC-417f	Gale warning.				
FSC-417g	Flood warning.				
FSC-417h	Flash flood warning.				
FSC-417i	Freeze/Hard Freeze warning.				
FSC-417j	Small craft warnings/advisories.				

Tie-in	Description	REQUIREMENT			
FSC-418	To certify knowledge of Flight Weather Briefing. When given a DD175 or like flight weather request, graphic METOC products, alphanumeric meteorological products, appropriate software and hardware, and knowledge of forecasting rules and theories, prepare a minimum of 20 flight weather briefings and 5 VFR Stamp flight weather briefings.	MAI Init	Date	Qual Board	MAI Init
FSC-418a	Evaluate current atmospheric parameters along the flight path.				
FSC-418b	Forecast the atmospheric impacts along the flight path.				
FSC-418c	Forecast the meteorological conditions at destination(s) and alternate(s).				

Tie-in	Description	REQUIREMENT			
FSC-419	To certify knowledge of flight weather packets. Given a flight weather packet request, prepare and brief a flight weather packet. Flight weather packet shall include the following products.	MAI Init	Date	Qual Board	MAI Init
FSC-419a	Construct a horizontal weather depiction.				
FSC-419b	Construct a ditch-heading chart.				
FSC-419c	Construct an altimeter setting chart.				
FSC-419d	Construct an upper-level wind chart.				
FSC-419e	Construct sea surface temperature chart.				
FSC-419f	Prepare DD-175-1 flight weather brief.				
FSC-419g	Prepare an OPNAV 3140/25 flight forecast folder.				

FSC-419h	Include mission essential products as applicable.				

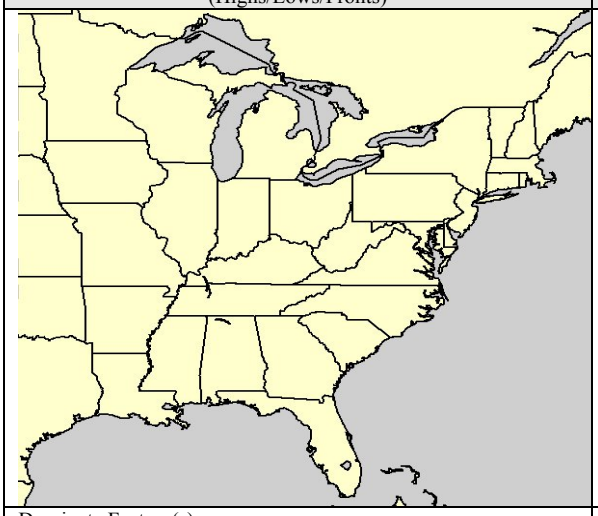
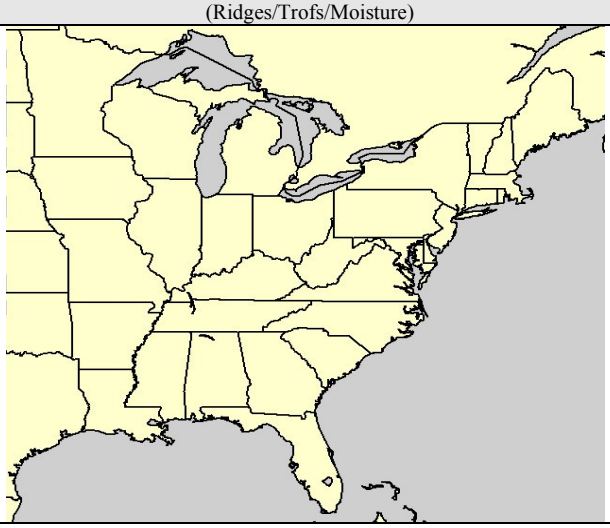
Tie-in	**Description**	**REQUIREMENT**			
FSC-420	To certify knowledge of verifying meteorological model output.	MAI Init	Date	Qual Board	MAI Init
FSC-420a	Through practical application, verify meteorological model output by identifying strengths and weaknesses of global, regional, and mesoscale numerical models.				

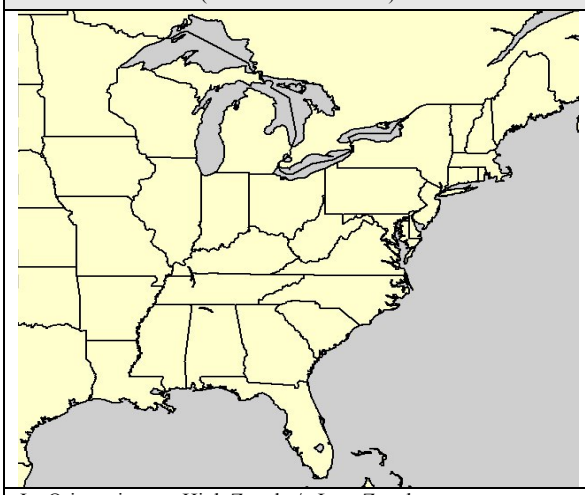
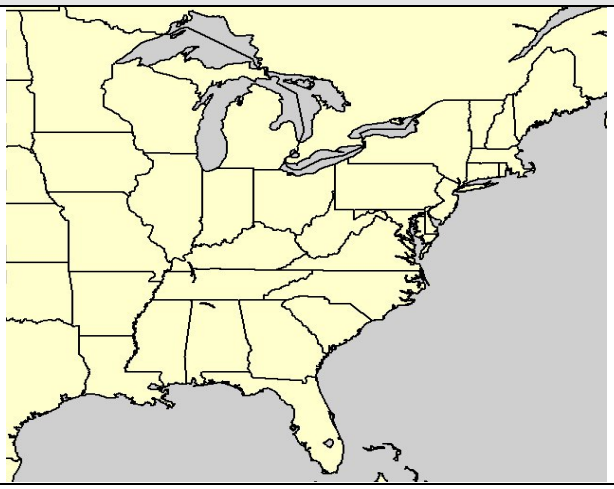
APPENDIX E

FORECAST WORKSHEET

Forecaster:		**Date:**		**Time:**	

SYNOPTIC ANALYSIS

Surface (Highs/Lows/Fronts)	**500 MB** (Ridges/Trofs/Moisture)
	
Dominate Feature(s):	Dominate Feature(s):
Intensity/Movement:	Vorticity Advection: PVA / Neutral / NVA
Thermal Advection: CAA / Neutral / WAA	Thermal Advection: CAA / Neutral / WAA
Moisture Advection: Moist / Neutral / Dry	Moisture Advection: Moist / Neutral / Dry

300 MB (Jet Stream/Jet Maxes)	**ADDITIONAL LEVEL** (Ridges/Trofs/Moisture)
	
Jet Orientation: High Zonal / Low Zonal	Dominate Feature(s):
Jet Maxe(s):	Vorticity Advection: PVA / Neutral / NVA

Thermal Advection: CAA / Neutral / WAA	Thermal Advection: CAA / Neutral / WAA
Moisture Advection: Moist / Neutral / Dry	Moisture Advection: Moist / Neutral / Dry

Current Radar Synopsis & Reasoning:	**Current Satellite Synopsis & Reasoning:**

Synopsis:

SKEW-T ANALYSIS

Sounding Location:		**Valid Time**	**00 Z / 12 Z**
Inversions:		Inversion break temps	° / ° / °
CCL:	Ft	Freezing Lvl(s):	Ft / Ft
LCL:	Ft	850-500 ΔT:	° C
LFC:	Ft	WBZ:	Ft
SSI:		850-300 ΔT:	° C
LI:		T1/T2/Hail:	/ / “
CAPE:			
KI:			
TT:			
Conv TP:	°C		

MOS OUTPUT

DTG	12 HR / VT:				24HR / VT:			
MODEL	TEMP	POPS	PTYP	QPF	TEMP	POPS	PTYP	QPF
GFS / AVN								
ETA/ MM5								
MRF								
DTG	36 HR / VT:				48HR / VT:			
MODEL	TEMP	POPS	PTYP	QPF	TEMP	POPS	PTYP	QPF
GFS / AVN								
ETA/ MM5								
MRF								

MODEL INITIALZATION & COMPARISON

Provide a detailed assessment on the initialization of **3 models.**

MODEL 1:	**RUN TIME:**
MODEL 2:	**RUN TIME:**
MODEL 3:	**RUN TIME:**

FORECAST SYNOPTIC – MESOSCALE – MICROSCALE JUSTIFICATION

Provide a detailed discussion of the forecast location and intensity of current synoptic/mesoscale features and how they will affect local conditions (25nm radius) during the timeframes indicated. This shall include a justified assessment of potential hazards and warnings that may impact operations during each period.

00-12 Hour Outlook	**Valid From:**	**To:**
12-24 Hour Outlook	**Valid From:**	**To:**
24-48 Hour Outlook	**Valid From:**	**To:**
48-72 Hour Outlook	**Valid From:**	**To:**
72-96 Hour Outlook	**Valid From:**	**To:**

APPENDIX F

JOURNEYMAN METOC ANALYST QUALIFICATION CHECKLIST

RANK: _____ NAME: _____ SSN: _____

METOC INSTRUCTOR: _____ LOCATION: _____

DATE CERTIFICATION BEGAN: _____ METOC CHIEF: _____

DATE QUALIFICATION AWARDED: _____ METOC OFFICER: _____

Tie-in	**Description**	**REQUIREMENT**			
JCP-121	To certify knowledge of the components, billets, equipment and capabilities that comprise the Marine Corps METOC support architecture.	MAI Init	Date	Qual Board	Date
JCP-121A	MCAS/MCAF METOC Support				
JCP-121B	Marine Wing Support Group				
JCP-121C	Marine Expeditionary Force				
JCP-121D	METOC Support Team (MST).				
JCP-121E	Marine Wing Support Squadron (MWSS) Weather Service Section.				
JCP-121F	Staff Weather Officer (SWO).				
JCP-121G	Joint Weather Officer (JWO).				
JCP-121H	Joint METOC Forecast Center (JMFU).				
JCP-121I	Aircraft Command Element (ACE) Weather Officer (ACE WXO).				
JCP-121J	Mobile Meteorological Facility Replacement (MetMF(R)).				
JCP-121K	NITES IV.				

Tie-in	**Description**	**REQUIREMENT**			
JCP-122	To certify knowledge of local area policies and procedures.	MAI Init	Date	Qual Board	Date
JCP-122A	Airfield description.				
JCP-122B	SOP procedures.				
JCP-122C	Command support structure.				
JCP-122D	Destructive weather procedures.				
JCP-122E	Security requirements.				
JCP-122F	Watch composition and schedule.				
JCP-122G	Watch procedures.				
JCP-122H	Local forms				
JCP-122I	Reference and Technical Library procedures.				
JCP-122J	Local area forecaster handbook-weather regimes.				

Tie-in	Description	REQUIREMENT			
JCP-123	To certify knowledge of regulations, orders, and instructions governing classified materials and software.	MAI Init	Date	Qual Board	Date
JCP-123A	The METOC Analyst Apprentice shall identify and state the security regulations, orders, and instructions governing security and state the general content of each.				

Tie-in	Description	REQUIREMENT			
JCP-124	To certify knowledge of operating garrison METOC equipment. The METOC Analyst Apprentice shall define and discuss strengths, weaknesses, and capabilities of the following garrison METOC equipment.	MAI Init	Date	Qual Board	Date
JCP-124A	Meteorological Integrated Data Display System (MIDDS).				
JCP-124B	Lightning Position and tracking system (LPATS).				
JCP-124C	Pilot to Forecaster Radio (METRO).				
JCP-124D	Doppler radar system (WSR88D).				
JCP-124E	Wet Bulb Globe Temperature Index Sensors (WBGTI).				
JCP-124F	Tower to metro displays/communications (WXVISION).				
JCP-124G	Hand Held equipment (PMQ-3, sling psychrometer, etc.).				

Tie-in	Description	REQUIREMENT			
JCP-125	To certify knowledge of METOC software applications. Without the aid of references, define and discuss, the performance capability, mission supported by application, and generated products of the specified meteorological software.	MAI Init	Date	Qual Board	Date
JCP-125A	GFMPL.				
JCP-125B	TAWS.				
JCP-125C	AREPS.				
JCP-125D	MIDDS.				
JCP-125E	METCAST.				
JCP-125F	JMV.				

Tie-in	Description	REQUIREMENT			
JCP-126	To certify knowledge of atmospheric fundamentals. The METOC Analyst Apprentice shall verbally define and discuss the atmospheric fundamentals listed.	MAI Init	Date	Qual Board	Date
JCP-126A	Long/short wave trough/ridges.				

	(a) Deepening/building/intensifying. (b) Filling/weakening. (c) Cyclogenesis/frontogenesis. (d) Cyclolysis/frontolysis.				
JCP-126B	Pressure systems. (a) Baroclinic/barotropic. (b) Warm/cold air advection. (c) Dry/moist air advection.				
JCP-126C	Frontal systems. (a) Active/inactive cold fronts. (b) Active/inactive warm fronts. (c) Stationary fronts. (d) Warm/Cold occlusions. (e) Type “A”/”B” occlusions.				
JCP-126D	Jet features. (a) Polar front jet stream. (b) Subtropical jet stream. (c) Conduction-radiation—advection-convection.				
JCP-126E	Thickness.				
JCP-126F	Vorticity.				
JCP-126G	Condensation/evaporation/sublimation.				
JCP-126H	Convergence/confluence.				
JCP-126I	Divergence/diffluence.				
JCP-126J	Types of baroclinic/barotropic low-pressure systems.				
JCP-126K	Types of baroclinic/barotropic high-pressure systems.				
JCP-126L	Gradient wind.				
JCP-126M	Geostrophic wind.				
JCP-126N	Relative/absolute/specific humidity.				
JCP-126O	Pressure gradient.				
JCP-126P	Cloud identification/formation.				

Tie-in	**Description**	**REQUIREMENT**			
JCP-127	To certify knowledge of analyzing and interpreting upper atmospheric weather charts. Given reference materials, The METOC Analyst Apprentice shall analyze and interpret the 925/850/700/500/300/250/200 mb constant pressure charts for the features listed.	MAI Init	Date	Qual Board	Date
JCP-127A	Isoheights.				
JCP-127B	Isotherms.				
JCP-127C	Areas of significant moisture.				
JCP-127D	Major short wave axis, troughs and ridges.				
JCP-127E	Minor short wave axis, troughs and ridges.				
JCP-127F	High and Low height centers.				
JCP-127G	Warm and cold pockets.				
JCP-127H	Upper fronts (where applicable).				

Tie-in	Description	REQUIREMENT			
JCP-128	To certify knowledge of analyzing and interpreting a surface pressure chart. When given a surface chart, the METOC Analyst Apprentice shall apply analytical techniques and depict the features listed.	MAI Init	Date	Qual Board	Date
JCP-128	Isobars.				
JCP-128	High and Low pressure centers.				
JCP-128	Fronts.				
JCP-128	Highlight weather symbols.				
JCP-128	Troughs.				
JCP-128	Label air masses.				
JCP-128	Dry lines.				
JCP-128	Isallobars.				
JCP-128	Isodrosotherms.				
JCP-128	Identify outflow boundaries.				

Tie-in	Description	REQUIREMENT			
JCP-129	To certify knowledge of analyzing and interpreting a thickness chart. The METOC Analyst Apprentice when given a thickness chart, shall apply analytical techniques and depict the features listed.	MAI Init	Date	Qual Board	Date
JCP-129	Warm/cold air advection.				
JCP-129	High and Low pressure centers.				
JCP-129	Fronts.				
JCP-129	540Dam Line				
JCP-129	Troughs.				
JCP-129	Label air masses.				
JCP-129	Jet stream.				

Tie-in	Description	REQUIREMENT			
JCP-130	To certify knowledge of analyzing and interpreting a vorticity chart. When given a vorticity chart, apply analytical techniques and depict the features listed.	MAI Init	Date	Qual Board	MAI Init
JCP-130A	Positive/negative vorticity areas.				
JCP-130B	Shear lobes.				
JCP-130C	Advection lobes.				
JCP-130D	Vorticity lobes.				
JCP-130E	X-N distribution.				
JCP-130F	Jet stream				
JCP-130G	UVM/DVM				

Tie-in	Description	REQUIREMENT			
JCP-131	To certify knowledge of analyzing and interpreting satellite imagery. When given satellite imagery, determine and state the type of satellite imagery, apply analytical techniques, and depict the features listed.	MAI Init	Date	Qual Board	MAI Init
JCP-131A	Jet stream(s). (a) Location of jet stream(s). (b) Type of jet stream(s).				
JCP-131B	High and Low circulation center locations.				
JCP-131C	Cloud types.				
JCP-131D	Frontal systems, troughs and ridges.				
JCP-131E	Land/terrain features.				
JCP-131F	Significant weather phenomena. (a) Thunderstorms. (b) Squall Lines.				
JCP-131G	Tropical features. (a) Tropical cyclones. (b) Tropical Upper tropospheric troughs.				

Tie-in	Description	REQUIREMENT			
JCP-132	To certify knowledge of analyzing and interpreting Doppler radar imagery. When given Doppler radar imagery, determine and state the type of radar data and identify meteorological features on the products listed.	MAI Init	Date	Qual Board	MAI Init
JCP-132A	Base reflectivity products. (a) Bow echoes (b) Potential thunderstorm features. (c) Outflow boundaries. (d) Circulation induced boundaries.				
JCP-132B	Base velocity products. (a) Outflow patterns. (b) Regions of shear. (c) Circulation patterns.				
JCP-132C	Base spectrum width products.				
JCP-132D	Derived products.				

Tie-in	Description	REQUIREMENT			
JCP-133	To certify knowledge of conducting streamline analysis. When given a wind chart, conduct a streamline analysis denoting the features listed.	MAI Init	Date	Qual Board	MAI Init
JCP-133A	Streamlines.				
JCP-133B	Asymptotes (convergent/divergent).				
JCP-133C	Neutral points.				
JCP-133D	Label cyclonic and anti-cyclonic centers.				
JCP-133E	Isotachs.				

JCP-133F	Wind maximums and minimums.				

Tie-in	Description	REQUIREMENT			
JCP-134	To certify knowledge of analyzing and forecasting atmospheric conditions from the Skew-T, Log P Diagram.	MAI Init	Date	Qual Board	MAI Init
JCP-134A	Compute indices. (a) Lifted index (b) KI index (c) Sweat index (d) Showalter's index (e) Total Totals				
JCP-134B	Analyze negative/positive energy areas.				
JCP-134C	Analyze for equilibrium levels.				
JCP-134D	Compute turbulent areas.				
JCP-134E	Compute tops of convective activity.				
JCP-134F	Compute contrails.				
JCP-134G	Compute icing types and levels.				
JCP-134H	Compute maximum and minimum temperatures.				
JCP-134I	Compute hail.				
JCP-134J	Compute thunderstorm gusts.				
JCP-134K	Analyze freezing level.				
JCP-134L	Analyze for areas of moisture.				
JCP-134M	Compute D-Values.				
JCP-134N	Compute Relative humidity.				

Tie-in	Description	REQUIREMENT			
JCP-135	To certify knowledge of applied meteorological reasoning in the forecasting of movement and intensity of synoptic scale features. When given required charts, forecast intensity and movement of features listed.	MAI Init	Date	Qual Board	MAI Init
JCP-135A	Forecast movement and intensity changes in major short wave troughs/ridges.				
JCP-135B	Forecast movement and intensity in upper level high and low pressure system.				
JCP-135C	Forecast isotherms in major short wave features.				
JCP-135D	Forecast moisture in major short wave features.				
JCP-135E	Forecast movement and intensity in minor short waves.				
JCP-135F	Forecast cyclogenesis of baroclinic low-pressure systems.				
JCP-135G	Forecast cyclolosis of baroclinic low-pressure systems.				
JCP-135H	Forecast anticyclogenesis of baroclinic high-pressure systems.				

JCP-135I	Forecast anti-cyclolysis of baroclinic high-pressure systems.				
JCP-135J	Forecast movement and intensity changes in surface pressure systems.				
JCP-135K	Forecast movement and intensity changes in surface frontal systems.				
JCP-135L	Forecast synoptic scale precipitation.				
JCP-135M	Forecast long wave patterns.				
JCP-135N	forecast movement of jet maxes.				

Tie-in	**Description**	**REQUIREMENT**			
JCP-136	To certify knowledge of forecasting severe weather. When given required charts, The METOC Analyst Apprentice shall analyze and forecast for severe weather elements listed.	MAI Init	Date	Qual Board	MAI Init
JCP-136A	Vertical and horizontal wind shear gradients.				
JCP-136B	Severe Icing.				
JCP-136C	Severe/Extreme Turbulence.				
JCP-136D	Tornadic activity.				
JCP-136E	Thunderstorm activity.				
JCP-136F	Tropical Systems.				
JCP-136G	Winter Storms.				

Tie-in	**Description**	**REQUIREMENT**			
JCP-137	To certify briefing of METOC features from (re)analyzed products. Utilizing enclosure (5), analyze and brief (formally or informally) atmospheric dynamic fundamentals depicted on the following products.	MAI Init	Date	Qual Board	MAI Init
JCP-137A	Synoptic weather charts.				
JCP-137B	Thickness charts.				
JCP-137C	Vorticity charts.				
JCP-137D	Constant pressure charts.				
JCP-137E	Tropical cyclone warning displays.				
JCP-137F	Skew-T, Log P diagrams.				
JCP-137G	Streamline charts.				
JCP-137H	Satellite imagery.				
JCP-137I	Radar imagery.				

Tie-in	**Description**	**REQUIREMENT**			
JCP-138	To certify knowledge of the content and development of correspondence that relates to METOC operations. The apprentice METOC analyst, through practical application, shall exhibit knowledge of content and techniques of composition for the messages listed.	MAI Init	Date	Qual Board	MAI Init
	Casualty Reports. (CASREP)				
	Weather Forecast (WEAX).				

	Joint Operational Area Forecast (JOAF).				
	Tactical Atmospheric Summary (TAS).				
	Assault Forecast (ASLTFCST).				
	Amphibious Objective Area Forecast (AOAFCST).				
	Strike Forecast (STRKFCST).				
	Chemical Downwind Message (CDM).				

Tie-in	**Description**	**REQUIREMENT**			
JCP-139	To certify knowledge of Terminal Aerodrome Forecast (TAF) content and format.	MAI Init	Date	Qual Board	MAI Init
JCP-139A	Minimum altimeter setting.				
JCP-139B	Cloud types, amounts, and layer heights.				
JCP-139C	Precipitation types.				
JCP-139D	Surface visibility.				
JCP-139E	Weather and obstruction to visibility.				
JCP-139F	Maximum/Minimum temperatures.				
JCP-139G	Wind Speed, Direction, and character.				
JCP-139H	Icing type, height, and intensity.				
JCP-139I	Turbulence type, height, and intensity.				
JCP-139J	Encode forecast meteorological elements in accordance with reference.				

Tie-in	**Description**	**REQUIREMENT**			
JCP-140	To certify knowledge of Weather warnings. In accordance with references and local procedures, assess and forecast conditions phenomenon requiring generation of the listed weather warnings.	MAI Init	Date	Qual Board	MAI Init
JCP-140A	Thunderstorm warnings.				
JCP-140B	Severe Thunderstorm warnings/watches.				
JCP-140C	Tornado warnings/watches.				
JCP-140D	Wind warnings.				
JCP-140E	Storm warning.				
JCP-140F	Gale/Whole Gale warning.				
JCP-140G	Flood warning.				
JCP-140H	Flash flood warning.				
JCP-140I	Freeze/Hard Freeze warning.				
JCP-140J	Small craft warnings/advisories.				
JCP-140K	Lightning warnings.				

Tie-in	**Description**	**REQUIREMENT**			
JCP-141	To certify knowledge of Flight Weather Briefing.	MAI Init	Date	Qual Board	MAI Init
JCP-141A	Evaluate current atmospheric parameters along the flight path.				
JCP-141B	Forecast the following atmospheric				

	impacts along the flight path. (a) Turbulence. (b) Icing. (c) Thunderstorm Activity. (d) Flight visibility. (e) Flight level Winds and temperature.				
JCP-141C	Forecast the following meteorological conditions at destination(s) and alternate(s). (a) Sky Conditions (b) Visibility (c) Type and character of Precipitation or obstruction to visibility. (d) Wind Direction (e) Wind Speed (within 5 knots of actual conditions) (f) Altimeter Setting				

Tie-in	**Description**	**REQUIREMENT**			
JCP-142	To certify knowledge of flight weather packets. Given a flight weather packet request, prepare and brief a flight weather packet.	MAI Init	Date	Qual Board	MAI Init
JCP-142A	Construct a horizontal weather depiction.				
JCP-142B	Construct a ditch-heading chart.				
JCP-142C	Construct an altimeter setting chart.				
JCP-142D	Construct an upper-level wind chart.				
JCP-142E	Construct a sea surface temperature chart.				
JCP-142F	Prepare DD-175-1 flight weather brief.				
JCP-142G	Prepare an OPNAV 3140/25 flight forecast folder.				
JCP-142H	Include mission essential products as applicable.				

Tie-in	**Description**	**REQUIREMENT**			
JCP-143	To certify knowledge of verifying meteorological model output. Verify meteorological model output by identifying strengths and weaknesses of each of the following numerical models.	MAI Init	Date	Qual Board	MAI Init
JCP-143A	NOGAPS				
JCP-143B	COAMPS				
JCP-143C	MM5				
JCP-143D	AVN				
JCP-143E	ETA				

Tie-in	Description	REQUIREMENT			
JCP-144	To certify knowledge of surf forecasting. Given the appropriate software, generate a surf forecast that contains the listed components in accordance with the references.	MAI Init	Date	Qual Board	MAI Init
JCP-144A	Significant breaker height.				
JCP-144B	Maximum breaker height.				
JCP-144C	Breaker period.				
JCP-144D	Breaker type.				
JCP-144E	Breaker angle.				
JCP-144F	Littoral current speed and direction.				
JCP-144G	Modified surf index.				
JCP-144H	Wind direction in surf zone.				
JCP-144I	Obtain beach profile data.				

Tie-in	Description	REQUIREMENT			
JCP-145	To certify knowledge of limited data forecasting.	MAI Init	Date	Qual Board	MAI Init
JCP-145A	Given 3 METOC products, selected by the MIA, and a location, write a plain language forecast for a period of 48 hours and verify for accuracy.				

Tie-in	Description	REQUIREMENT			
JCP-146	To certify knowledge of generation of specialized mission support products. Given a Request For Information (RFI), develop the required specialized forecast product to fulfill RFI requirement.	MAI Init	Date	Qual Board	MAI Init
JCP-146A	WEAX.				
JCP-146B	JOAF.				
JCP-146C	EOTDA.				
JCP-146D	TAWS.				
JCP-146E	METOC Impacts to operations.				
JCP-146F	Tactical atmospheric summaries.				
JCP-146G	EM propagation summaries.				
JCP-146H	Amphibious Assault Forecasts.				
JCP-146I	Strike Forecasts.				
JCP-146J	Assault Forecasts.				
JCP-146K	Climatology.				
JCP-146L	Environmental Support Packages.				
JCP-146M	Tidal products.				
JCP-146N	Solar/ Lunar Products.				
JCP-146O	Search and Rescue Brief.				

Tie-in	Description	REQUIREMENT			
JCP-147	To certify knowledge of tailored METOC weather briefs. Develop and conduct specialized/tailored weather briefs listed.	MAI Init	Date	Qual Board	MAI Init
JCP-147A	Tropical cyclone brief.				
JCP-147B	Climatology brief.				
JCP-147C	Astronomical/Lunar Brief.				
JCP-147D	Instrument Ground School Brief.				

Tie-in	Description	REQUIREMENT			
JCP-148	To certify knowledge of basic network administration functions. Utilizing an established METOC network and be able to perform the following basic network functions in order to identify, safeguard, and maintain network integrity.	MAI Init	Date	Qual Board	MAI Init
JCP-148A	Log on to the Network.				
JCP-148B	Connect to other computers on the network.				
JCP-148C	Transfer data to other computers on the Network.				
JCP-148D	Use shared folders and files.				
JCP-148E	Monitor access to/from the network and identify possible intrusions/problems.				
JCP-148F	When directed, add computers to the network.				

Tie-in	Description	REQUIREMENT			
JCP-607	Attain certification of cores skills required for Journeyman METOC Analyst qualification.	MAI Init	Date	Qual Board	MAI Init
JCP-607A	Utilizing enclosure (6), local certification requirements, question and answer periods, exhibit knowledge of the core skills required. Upon completion of the certification checklist, the marine shall be the subject of a certification board (JMA-608) to discern proficiency in the core skills required for JMA qualification				

Tie-in	Description	REQUIREMENT			
JCP-608	Be the subject of a formal certification board to discern qualification eligibility.	MAI Init	Date	Qual Board	MAI Init
JCP-608A	SNM will be the subject of a formal certification board comprised of, at a minimum, the METOC Chief or, the METOC Officer, and assigned instructor/mentor and one qualified JMA. SNM will be required to respond in a professional and technically correct manner to questions posed.				

APPENDIX G

APPRENTICE METOC ANALYST QUALIFICATION LETTER EXAMPLE

[COMMAND LETTERHEAD]

3500
[UNIT CODE]
[DD MO YYYY]

From: [Qualifying Authority], [Command], [Location]
To: [Name of individual receiving qualification] [SSN]/[MOS] USMC

Subj: APPRENTICE METOC ANALYST QUALIFICATION

Ref: (a) MCO P3500.66, T&R Manual, METOC

1. Through the certification processes in the functions and roles set forth by the reference, you are hereby qualified as an APPRENTICE METOC ANALYST.

2. This qualification authorizes you to conduct the following functions:

(a) Observe, record, and disseminate current weather parameters and validate accuracy of observation through use of your initials.

(b) Disseminate warnings and advisories set by the METOC unit.

(c) Calculate and disseminate wet bulb global temperature index.

(d) Operate lightning detection equipment.

(e) Operate weather radar equipment

(f) Plot and analyze upper atmospheric sounding data.

(g) Identification, retrieval and plotting of weather warnings affecting local area.

(h) Conduct pilot and ceiling balloon observations.

(i) Calculate astronomical, tidal and climatological data.

3. You shall maintain proficiency in the Apprentice METOC Analyst qualification per the reference.

4. The Apprentice METOC Qualification is the first qualification in the METOC community. Upon receipt of this qualification letter, you are directed to commence the next stage of training outlined in the reference.

[SIGNATURE]

APPENDIX H

FORECAST SUPPORT QUALIFICATION LETTER EXAMPLE

[COMMAND LETTERHEAD]

3500
[UNIT CODE]
[DD MO YYYY]

From: [Qualifying Authority], [Command], [Location]
To: [Name of individual receiving qualification] [SSN]/[MOS] USMC

Subj: FORECAST SUPPORT QUALIFICATION

Ref: (a) MCO P3500.66, T&R MANUAL, METOC

1. Through the certification events in the duties and roles set forth by the reference, you are hereby FORECAST SUPPORT QUALIFIED.

2. This qualification authorizes you to conduct the following functions:

(a) Analyze, interpret, and brief meteorological charts.

(b) Generate Terminal Aerodrome Forecasts (TAFS). (TAFs must be validated by the Journeyman METOC Analyst prior to transmission in order to ensure continuity is maintained throughout the area of interest).

(c) Generate DD175-1 Flight weather briefings under the supervision of a qualified Journeyman METOC Analyst.

(d) Generate 96 hour forecast products.

(e) Generate weather warnings and advisories. (Warnings and advisories must be validated by the Journeyman METOC Analyst prior to transmission in order to ensure continuity is maintained throughout the area of interest).

(f) Constantly monitor current and developing weather phenomenon for significant changes.

3. You shall maintain proficiency in the Forecast Support qualification per the reference.

4. The Forecast Support Qualification denotes confidence in your technical abilities and judgment to responsibly execute forecast support duties. The qualification allows you exercise valuable knowledge required to advance in your MOS. Upon receipt of this qualification letter, you are directed to continue to hone your technical proficiency in order to receive a recommendation to attend the Meteorological and Oceanographic Analyst/Forecaster (MOAF) course per the reference.

[SIGNATURE]